**ARCHITECTURE DEPARTMENT** **CHINESE UNIVERSITY OF HONG KONG**

MASTER OF ARCHITECTURE PROGRAMME 2008-2009 DESIGN REPORT

# RE-CREATING THE PUBLIC EDGE

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# RE-CREATING THE PUBLIC EDGE

The first part is the derivation of theories based on personal observations of different phenomenons.

The second part is the documentation of my personal experiences, observations and conclusions in this several years in our society with collaboration of SoCO in Sham Shui Po.

The third part is the generation of architectural solutions, researches ,the philosophy of design approaches.

# Part I

# Litancy ,Social structure and Caus-al studies

**Introduction of Society for Community Organization (SoCO),**
**An important organization to the life of the minority in Sham Shui Po.**
(sources: http://www.soco.org.hk/rights/rights_main_e.htm)

**What are their beliefs ?**

" Society for Community Organization (SoCO) firmly believes that everyone should be entitled to equal rights. Equal opportunity for participation and fair distribution of social resources is the foundation of human rights. In the face of the widening disparity between the rich and the poor, and the increasingly restrictive political arena, we stand firm in our crusade to establish an equal society and to build a strong power base for the people. We are motivated by a common dream, and that is: "Let us work hand in hand and shoulder to shoulder to build a caring, equal and just society".

**Who formed the organization ?**

SoCO is an incorporated, non-profit-making and non-governmental community organization. It was formed in 1972 by church people and was financially supported by donations from churches, overseas funding bodies, the Community Chest and individuals. SoCO has, through civic education programs and social actions, nurtured grassroots people with a sense of civic responsibility so that they can flex their political muscle. These people have, during the course, regained their self-confidence and cemented with one another to champion for an equal social system.

**Economic development and social inquality**

Grassroots people are struggling day in and day out to keep their head above water. It is most scornful to see economic development brings social inequality. These deprived cannot enjoy our economic success. They have been snubbed and fallen into oblivion .

**Who are the targets?**

Standing in the line of dejection are caged lodgers, tenants with financial difficulties and living in appalling conditions, aged singletons, street-sleepers, mothers with no one-way permit to live in Hong Kong, families made up of new immigrants and boat dwellers, etc. They are our serving targets.

In the coming years, SoCO will stand four square behind the grassroots in supporting them fight for their rights and social justice. By doing so, we hope that we can realize our common dream of making "all members of human family equal" .

"Mis-positioning" leads to a hawker commited suicide because of losing his job.

What should be the roles of hawkers,streetsleepers and minority in our society? Are they not important ?

# " Is it possible to solve social problems by architectural solutions?"

Is it possible to generate an architectural concept from past experiences and observations ?

## Architectural concept of "Re-position"

The below listed out some extremes of concepts and social values which are both describable to human as well as the quality of Architecture.

Human <-> Architecture

Psychology <-> Environment

Designs are going to shift or even reverse our normal concepts and the sensation of space.

1. [The most useless]
2. [The Stressful]
3. [The most Violent]
4. [The saddest place]
5. [The fastest]
6. [The Noisiest]
7. [The Chaotic]
8. [The most dangerous]
9. [The darkest]
10. [The most inactivated ]
11. [The lowest technology]
12. [The most repressive]
13. [Permanence]
14. [Poverty]

1' [The most useful]
2' [The most relaxing]
3' [The most Peaceful]
4' [The most enjoyable place]
5' [The most static]
6' [The most silent]
7' [The tidest]
8' [The sercurest]
9' [The lightest]
10' [The most energetic]
11' [The highest technology]
12' [The most Expressive]
13' [Impermanence]
14' [Richness]

**It may be an architectural,social or even psychological explosion.**

# Basic introduction to Sham Shui Po

urban decay

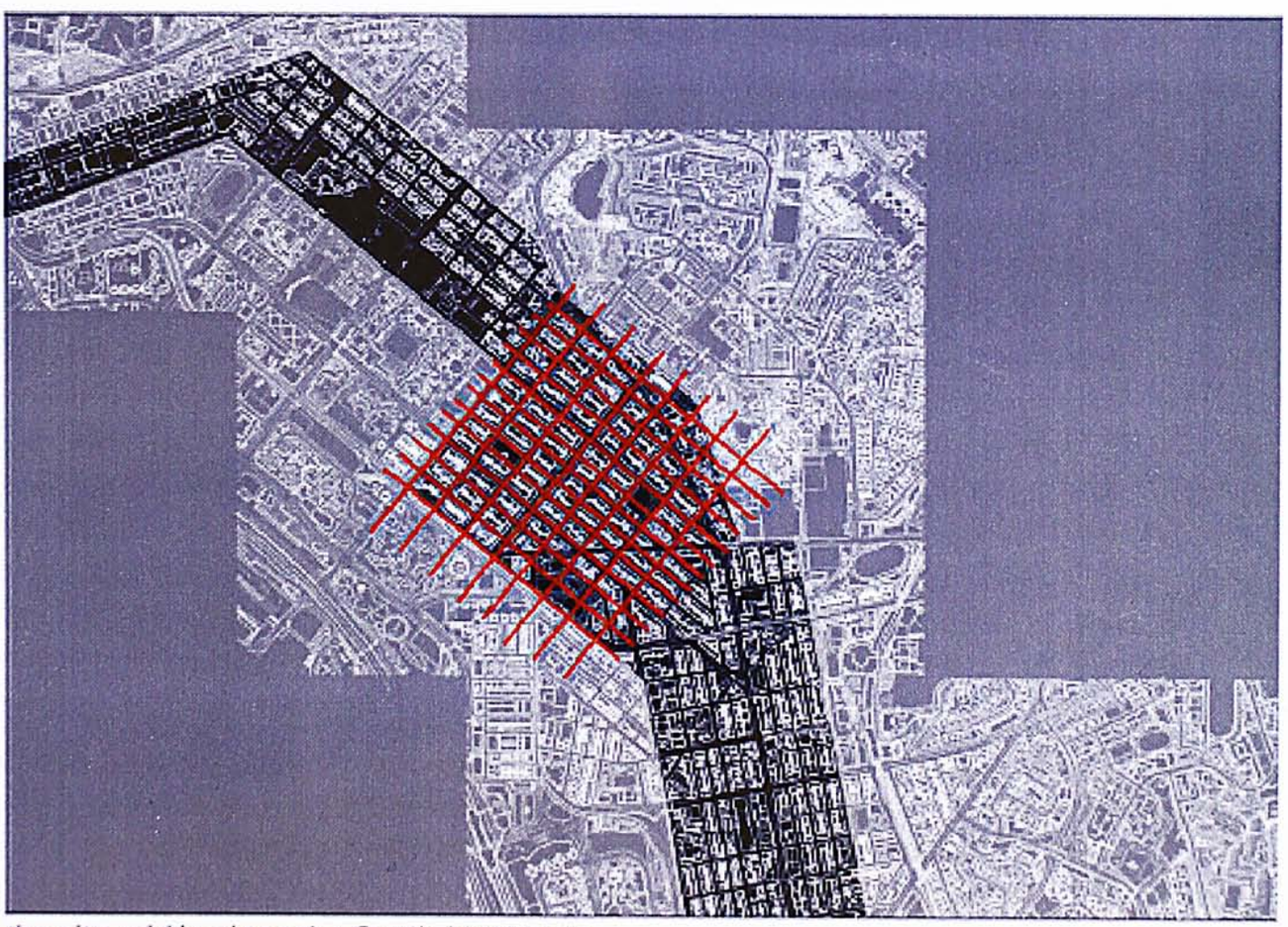
## Where is Sham Shui Po?

Sham Shui Po in Cantonese Chinese means Deep Water Pier. Its water was deeper than the beach of Cheung Sha Wan northeast. It is close to the former peninsula of Tai Kok Tsui. The low ridge of the peninsula ends in Sham Shui Po.

In the first stage, the town of Sham Shui Po was bounded by Yen Chou Street, Tung Chow Street, Wong Chuk Street and Apliu Street. Part of the town was on reclamation. The town was surrounded by villages of Un Chau, Tin Liu and Tong Mei. A nullah along Nam Cheong Street was constructed to drain the water of rivers north and east. The town was closed to Cosmopolitan Dock on the outer shore of Tai Kok Tsui

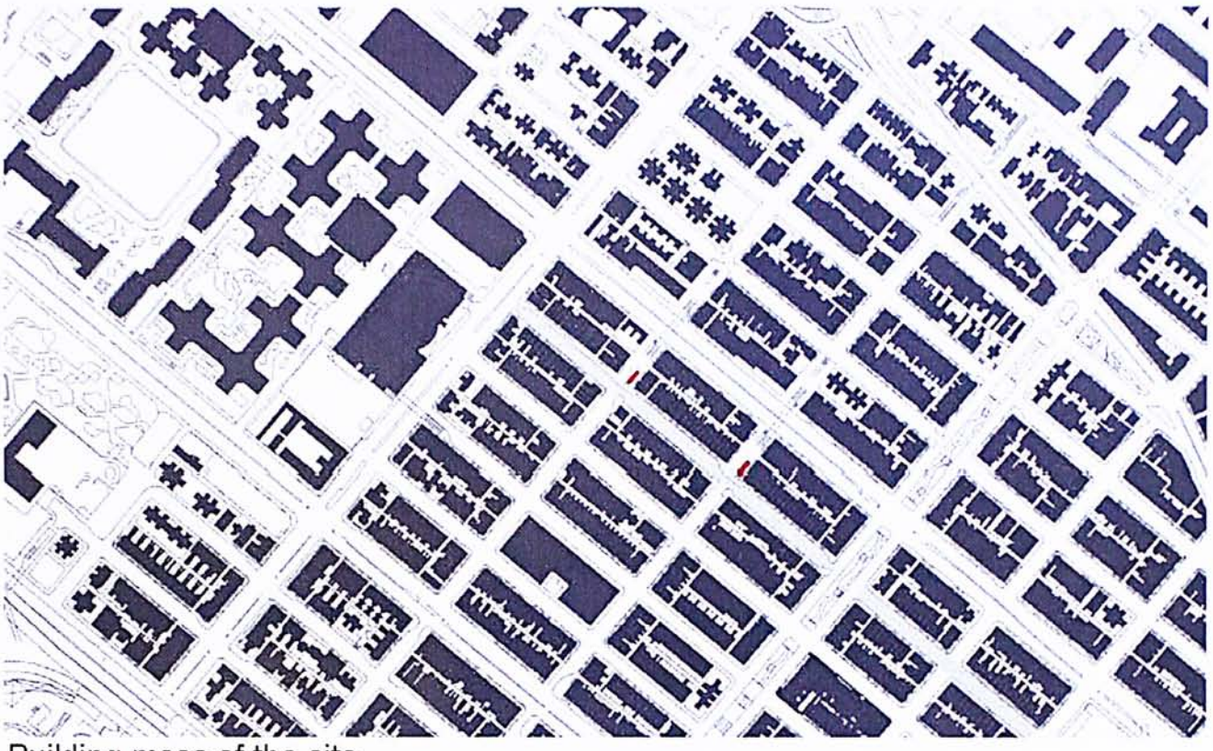
## what is the hotspot of Sham Shui Po?

The street market in Sham Shui Po is a hotspot for both locals and tourists.



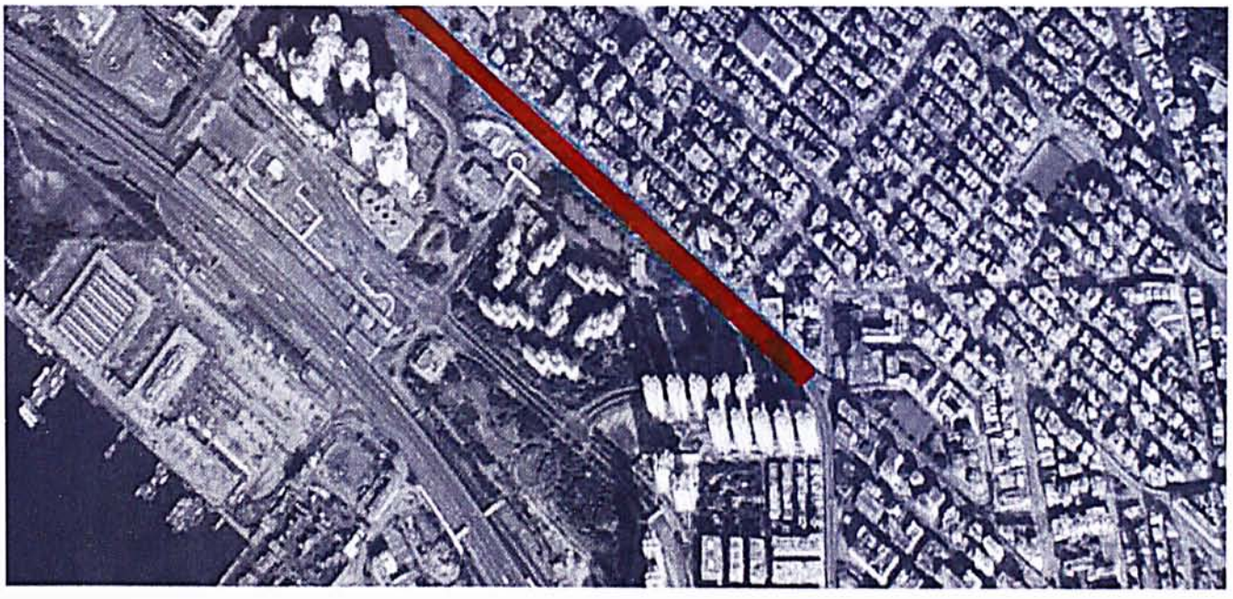
the site grid is along the South-North axis

## How is the building mass in Sham Shui Po?



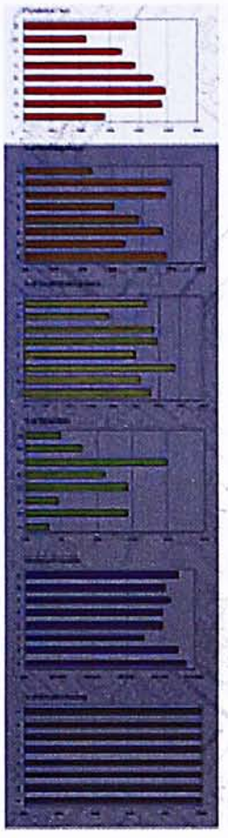
Building mass of the site

## What is the effect of infra structure to this old district?

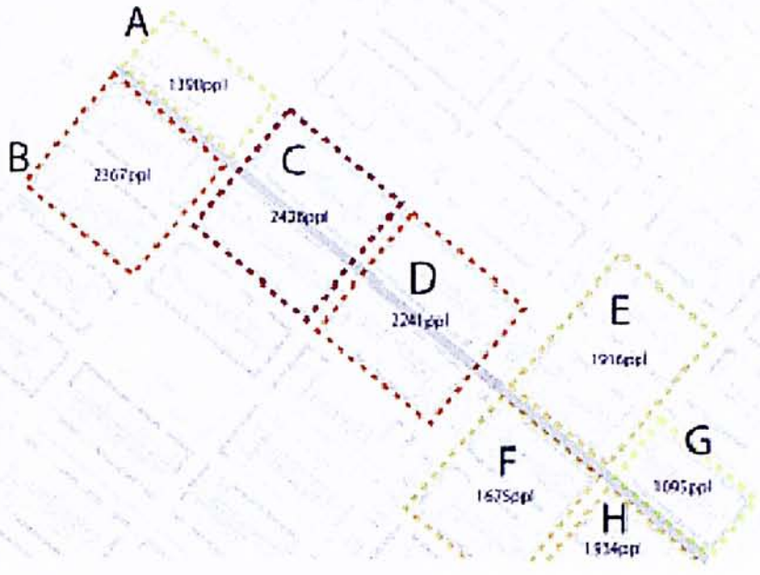


The west kowloon corridor along the edge of Sham Shui Po is the boundry between the newly development area and the decaying area. It is a noise source as well as a physical barrier and enviromental stressor which seperate the new and the old. Nowadays, hawkers and temporary markets are settled underneath.

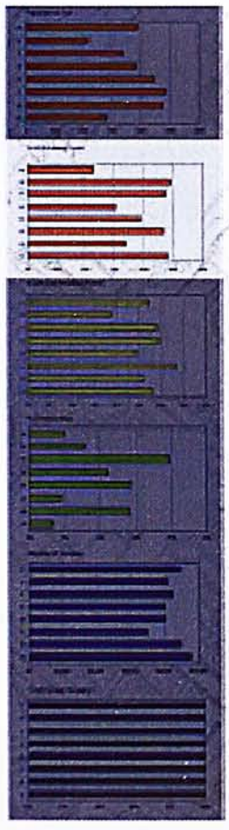
## How many people are living per block nowadays?



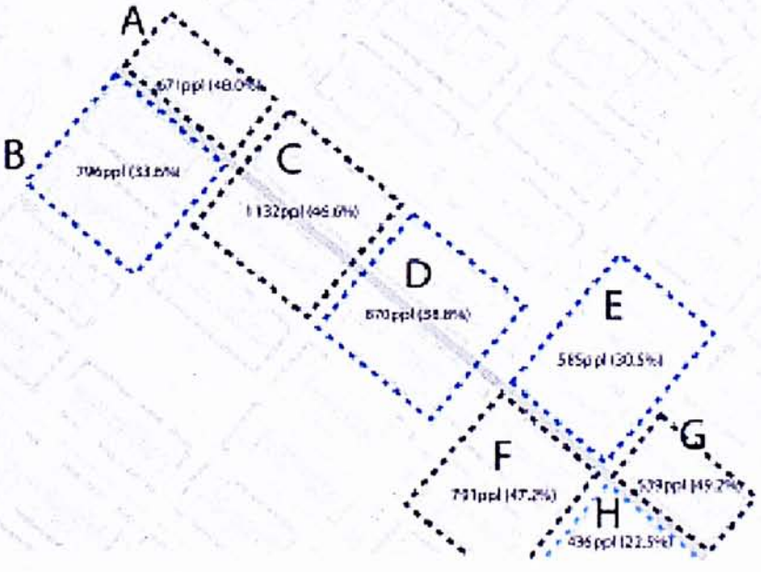
POPULATION SIZE



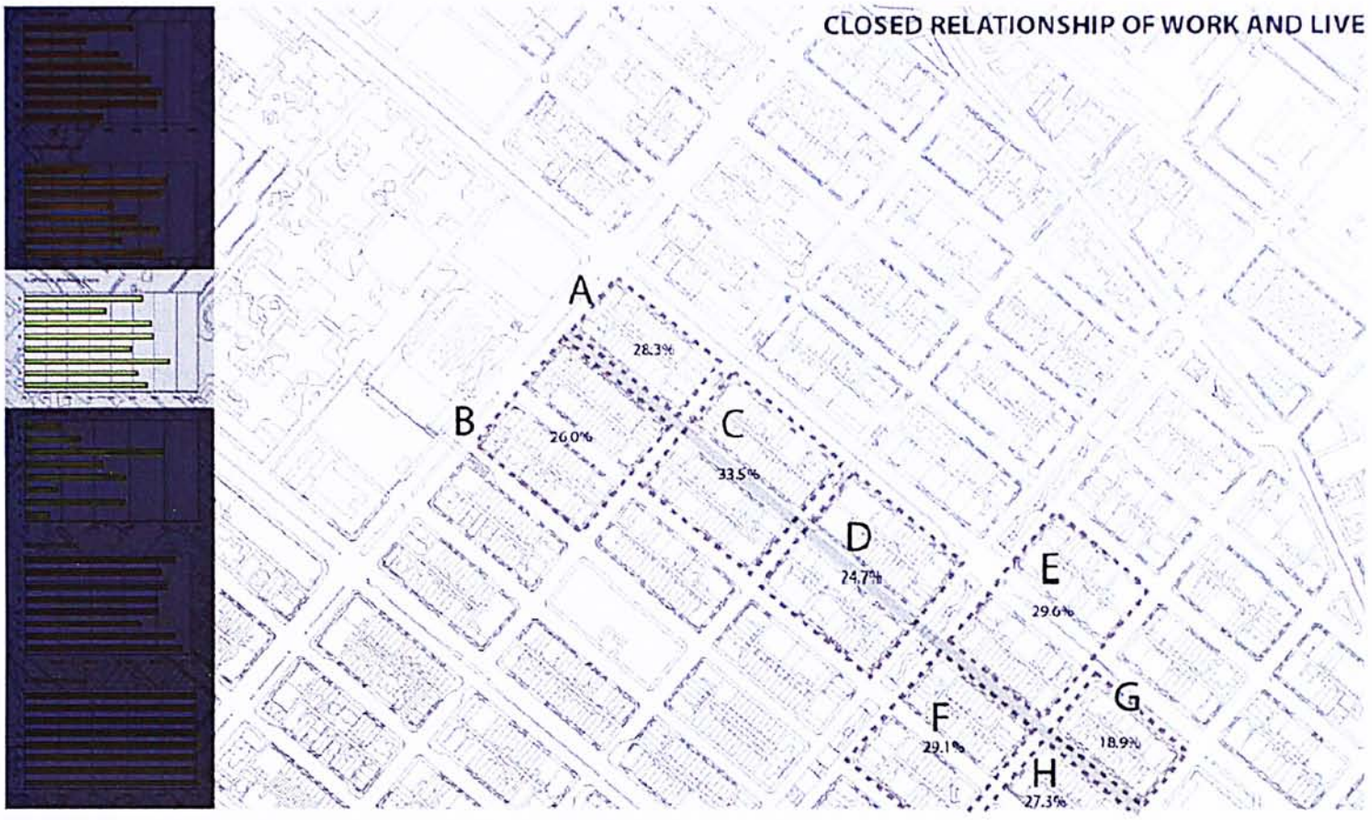

## How many people are the working group?



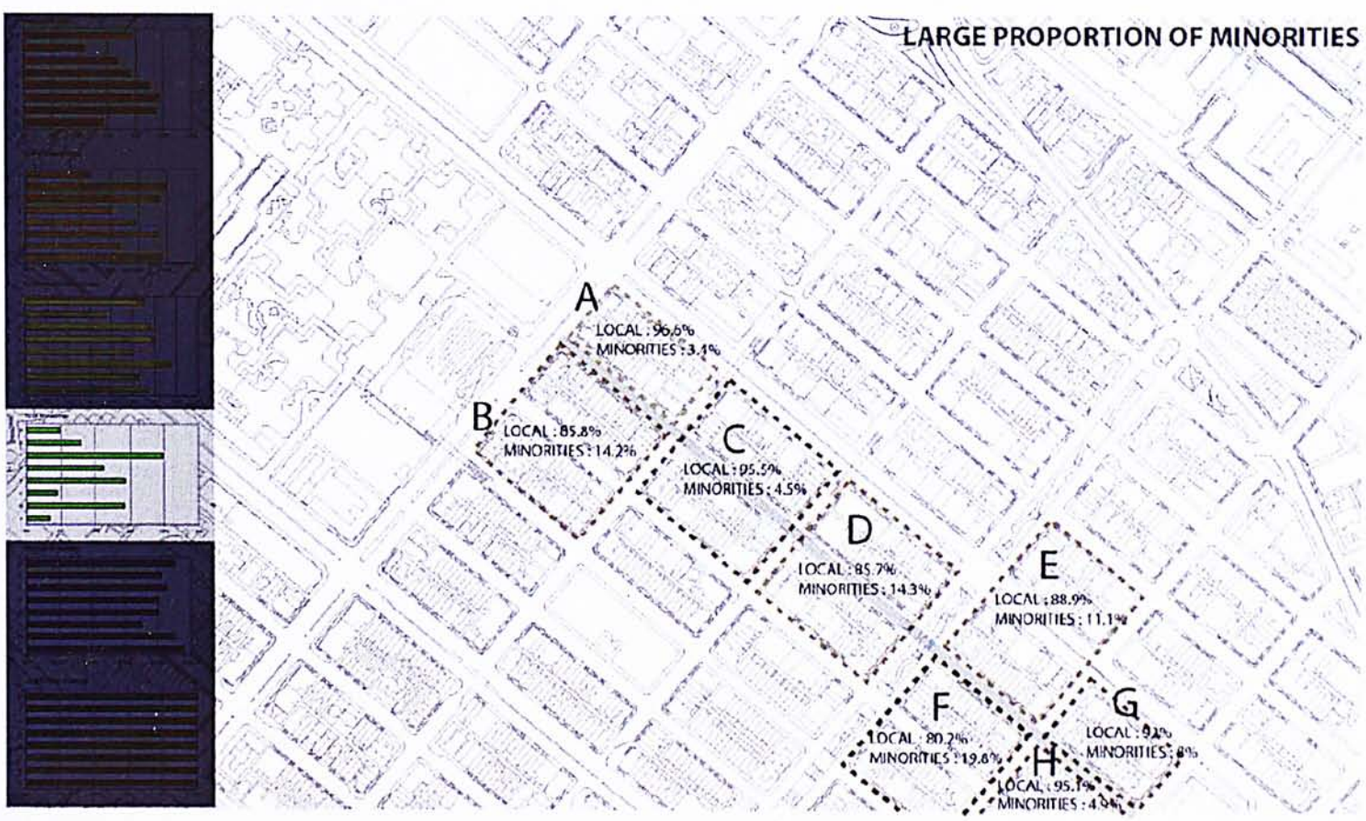
WORKING POPULATION SIZE



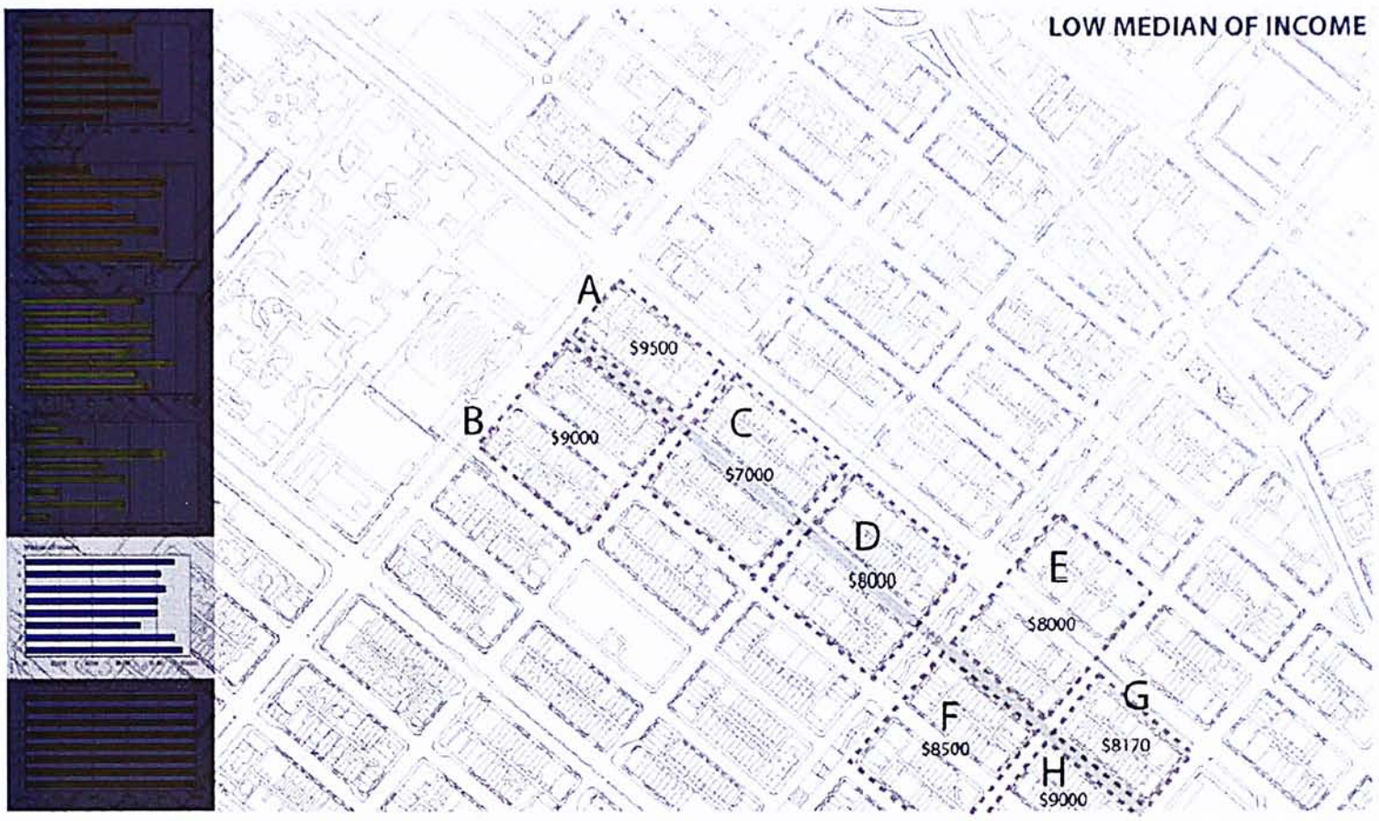
## How many people are working in the local district?



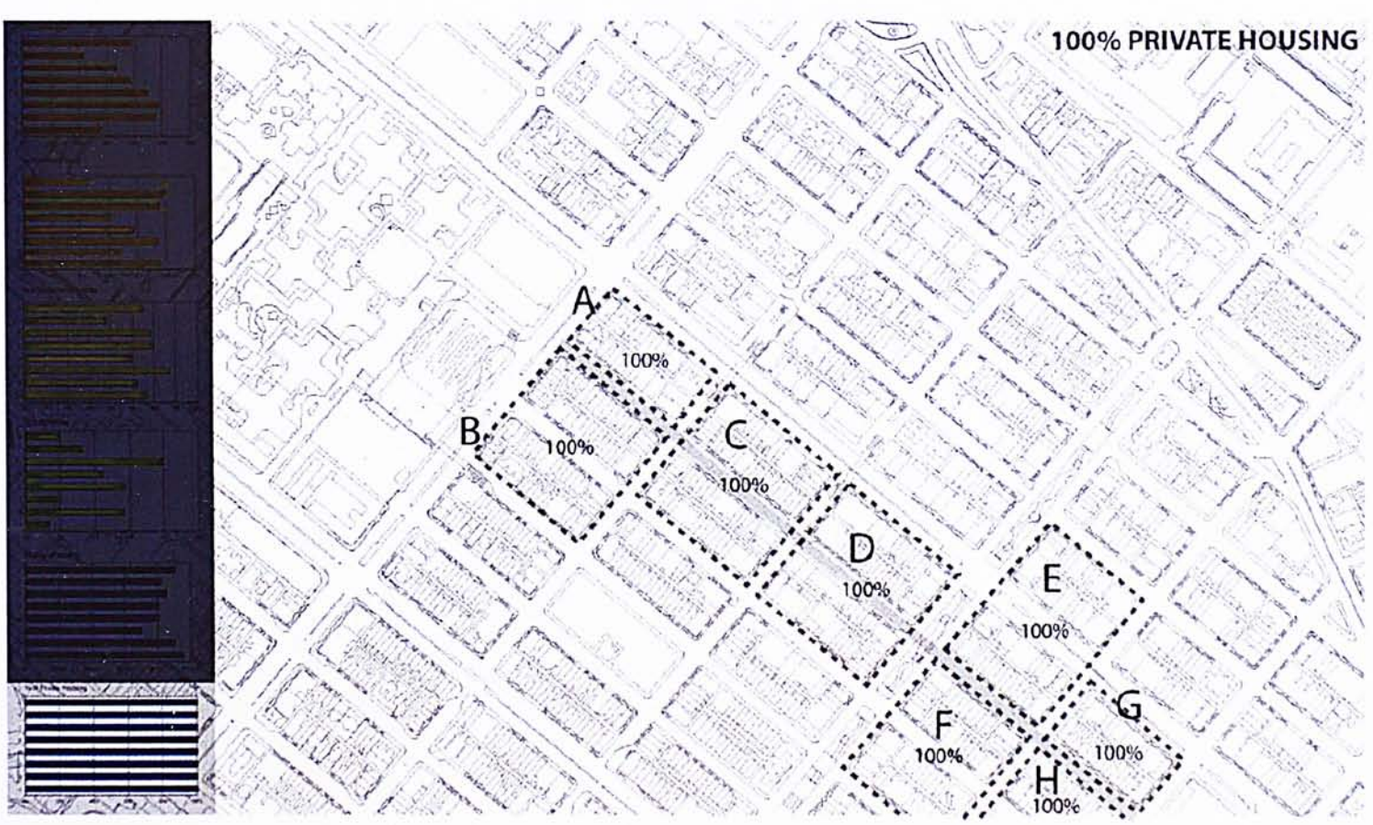

## How many people are the deprived minorities?



Other than the people with irregular income, how is the income?




Are the blocks all private housing ?



## Are there enough open space in the district? How is the quality of it?

The open space are all next to the busy traffic where minoriites settle mostly at night when the traffic is less busy.


## What are the problems of random settlement of people ?

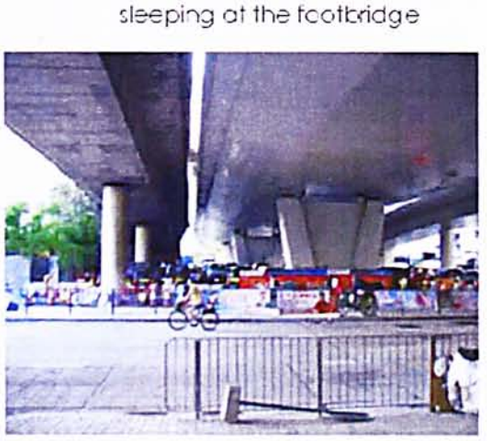
The street becomes untidy and it may also affect the behavorial effectiveness of other people.

cooking and living at the park

sleeping at the footbridge

parking at the railing

disconnected



noisy traffic

boring path

**What are the effects of speed and noise to the behaviors of the people and residents ?**

A noisy environment may make people feel less calm and may cause violence in the district.

**Habitation of street-sleepers**

**Observation: often sleep at corner site in search of sercurity**

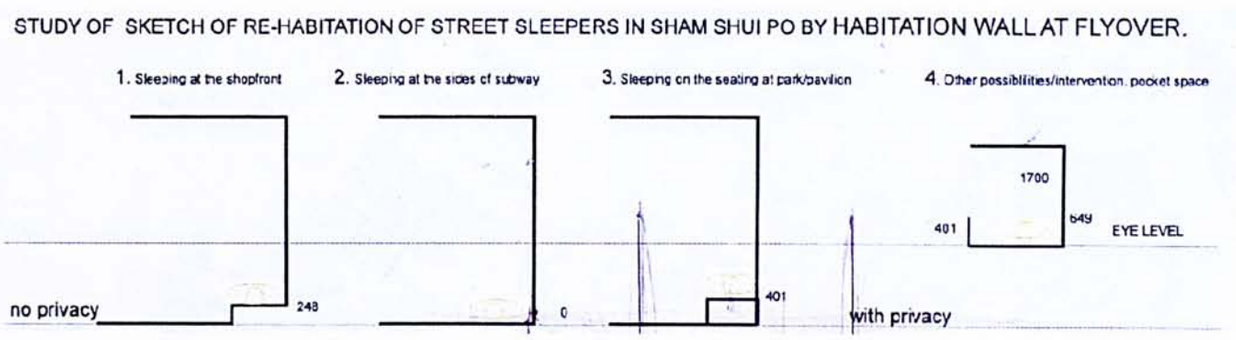
**How many streetsleepers are there in Hong Kong ?**

According to SoCO 2008, there are about 800 in Hong Kong.

**Where did they mainly settle on?**

**1. at subway 2. under highway 3. at shopfront**

**What may be possible?**

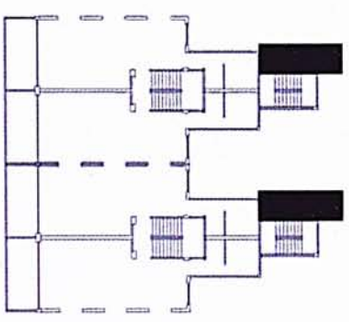



Comparison of the homeless under west kowloon corridor and the mobile living designed
by Petetin and Gregoire

## How are the typical buildings in Sham Shui Po ?

Some of the buildings are over 50 years.

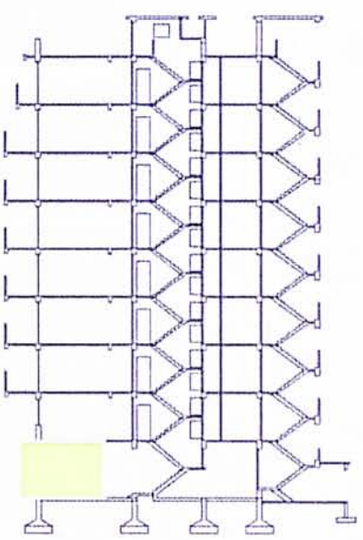
the small sheltered space on the street allows people to gather which is an important feature of buildings in Sham Shui Po.



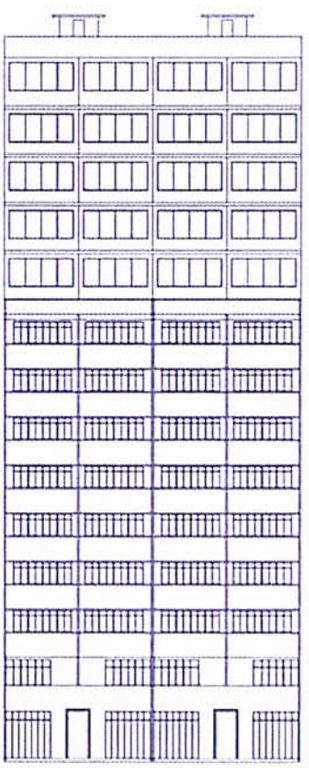
Modified plan

Extension of shared space for studying or other acitivities may be possible at the stairs.

## Buildings after the world war:



Existing building section



Buiding elevation

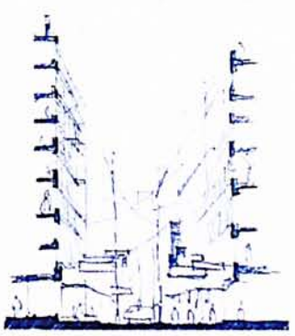
## How is the street life of Sham Shui Po ?

## What are the important features and why does it happen ?

(Image from our life in west kowloon 2 by SoCO)

Hawkers was originally settle on the street freely. After the control by the government, some are located on the newly built market. Some are kept on the street inside untidy tiny boxes. Some are located under the West kowloon corridor. Some lost their jobs. One of them even committed suicide.

sketch of Apliu Street



sketch of Pei Ho Street

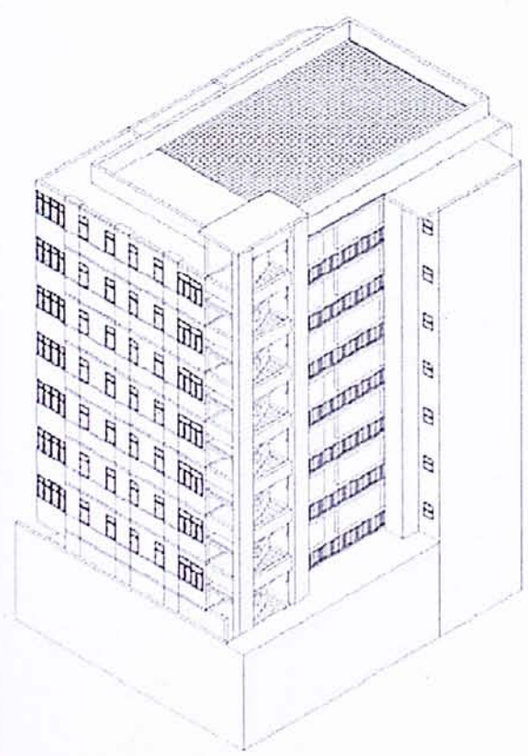
**How is the deterioration of environmental quality of architecture in Sham Shui Po ?**

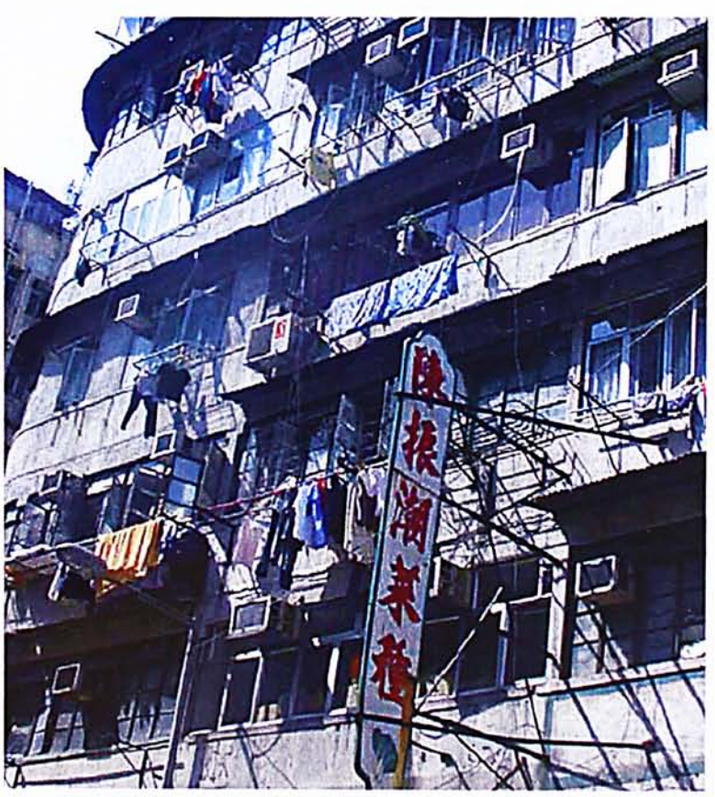
" pulse rates of people recorded accelerated heart rates when in a grey room than in a colorful room (Kuller 1976)"

The deterioration of materiality as well as the dark color of building created a sense of stress to the people. White building are more preferable.

PLAN, SECTIONS AND ELEVATION

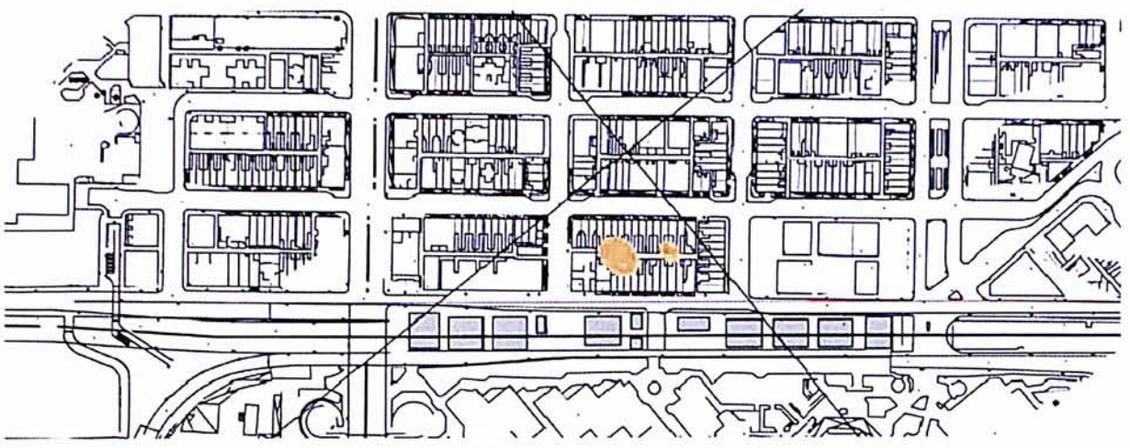
平面,則面及切面圖





**How is the deterioration of environmental quality of openspace in Sham Shui Po ?**

openspace1




**Environmental stressors to Hawkers,street-sleepers as well as some residents under the West Kolwoon Corridor of Sham Shui Po:**

**1.Noise 2.prolonged uncertainty 3. lack of predictability 4. lack of orders in working place,5. lack of sercurity because of lack of order.**

**Conclusions:**

[1] A more supportive and silent environment is needed.

**" Sir, please don't take photos, otherwise I can hardly earn my breakfast." 7-11-2008 5:45am**

**An unpredictable dialogue with hawkers during site visit.**

[2] A more secure open space should be provided.

## Introduction of environmental psychology

### What is environmental psychology?

" Enviromental psychology is the discipline that is concerned with the relationships between human behaviour and the physical environment."
(Heimstra&McFarling,1978)

"Enviromnental psychology is that area of psychology which brings into conjunction and analyzes the transactions and interrelationships of human experiences and actions with pertinent aspects of sociophysical surroundings."
(Canter&Craik,1981)

"Enviromental psychology is defined as the attempt to establish empirical and theoretical relationships between the behavior and experience of the person and his built environment." (Proshanshky,1976)

### Why is it important to architecture?

'Beginning in the 1950s, architects and behavioral scientists began working together toward another objective that has become integral to environmental psychology. Specifically, these professionals became convinced that the **built environment should reflect not just principles of construction and asethetics, but also should be designed with a heavy emphasis on meeting the psychological and behavioral needs of those who are to occupy the buildings."**
(Canter&Craik,1981)

### Elements in architecture in relation to environmental psychology.

1. Attention: "Restoring and enhancing people's capacity to voluntarily direct their attention is a major factor in maintaining human effectiveness."

Suggested architectural elements1: Some active and momentality structure may required to draw people's attentions.

2. Perception and cognitive mapping. "These structures link one's recall of experiences with perception of present events, ideas and emotions."

Suggested architectural elements2: Some memorial structure,photos or sculpture may required to recall the happy experiences of the people.

3. "Preferred enviromental psychology studies people's motivatons illustrating that people naturally seek out places where they will feel competent, confident, where they willl feel comfort or enjoyment. Further, research demonstrates that people have

**preference for coherence** ( a sense that things in an environment connect together) and **Legiblity** (that people can feel they may explore an environment without being lost.) "

Suggested architectural elements 3: We especially need more order in a place of chaos, with good proportionating so as to create a stronger sense of security to the deprived. More spatial connection may require to create a stronger sense of connection.

Suggested architectural elements 4: The flowing of space as well as flexibilities of elements become very essential that it may provide more freedom of choices to the people.

4. "Being involved and wanting to explore an environment requires that it have complexity ( containing enough variety to make it worth learning about.)"

Suggested architectural elements 5: varieties of repeating elements. The street format is more preferable than a static market because there are varieties of shops and life in the street. It provides choices for people to participate.

5. "Enviromental stress and coping - along with the common enviromental stressors (e.g., noise, climate extremes) some define stress as **the failure of preference**, lack of predictablilty and stimulus overload. Research has identified numerous behavioral and cognitive outcomes including physical illness, diminished altruism."

Suggested architectural elements 6: Stress of busy traffic should be reduced by re-routing or barriers. Some warm devices in public space may be provided in cold season.

6. "Participation - The field is committed to enhancing citizen involvement in environmental design, management and restoration efforts. It is concerned not ony with promoting citizen comprehension of environmental issues but with insuring their early and genuine participation in the design, modification and management of environments.

Suggested architectural elements 7: A mode of participation should be involved in planning of public space through public art or consultation. Public art may also help to create the link of experiences by the public so as to create a stronger sense of belonging of citizen to a place.

7. " Conservation behavior - The field has also played a major role in bringing psychological knowledge to bear upon the issue of developing an ecologically sustainable society. It explores environmental attitudes, perceptions and values as well as devise intervention techniques for promoting environmentally appropriate behavior.

Suggested architectural elements 8: Farming or planting activities not only create a sustainable environment but also provide choices of participation to the deprived.

## Why is it important to the people of Sham Shui Po?

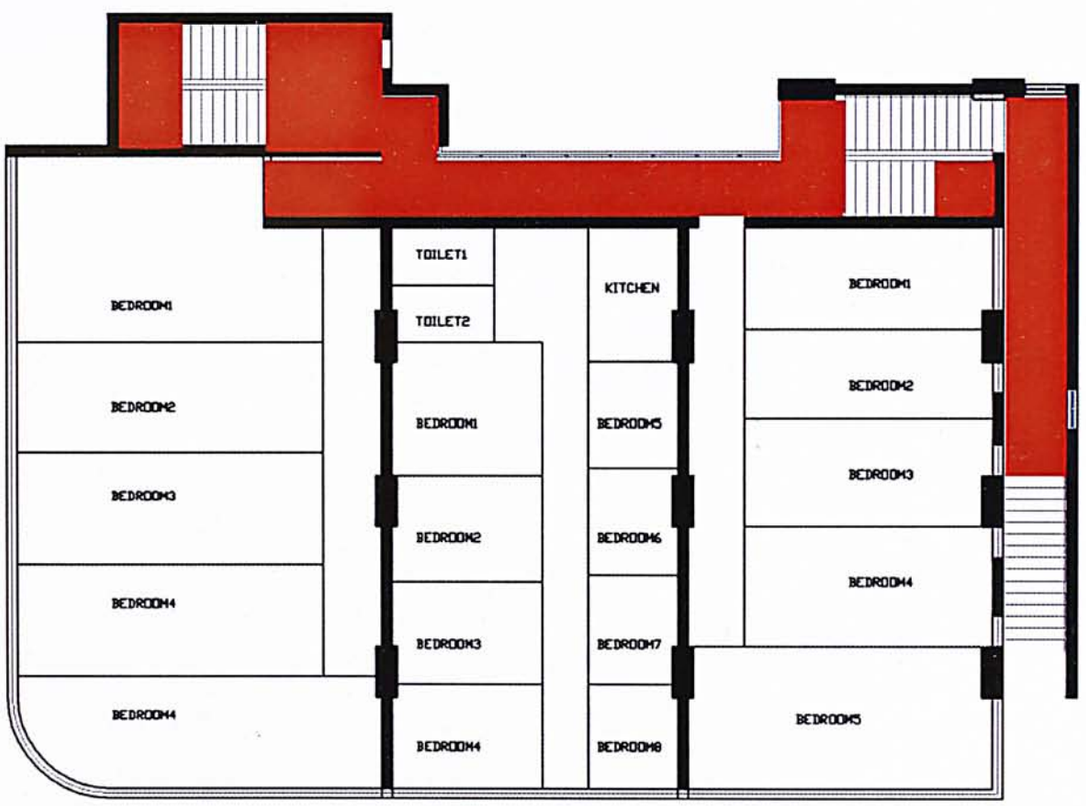
"Environmental psychology,emerged during the 1960s as the result of both scientific and societal concerns. At the societal level increased awarenass of community problems such as

1. overcrowding,
2. the shrinkage of natural resources, and
3. the deterioration of environmental quality

Sham Shui Po, the most deteriorating old district in Hong Kong comprises a lot of social problems such as mental illness and family volience. To a certain extent, these are attributed to the environmental stresses such as overcrowding, lack of predictability of their living styles.

## How is the overcrowding conditions?

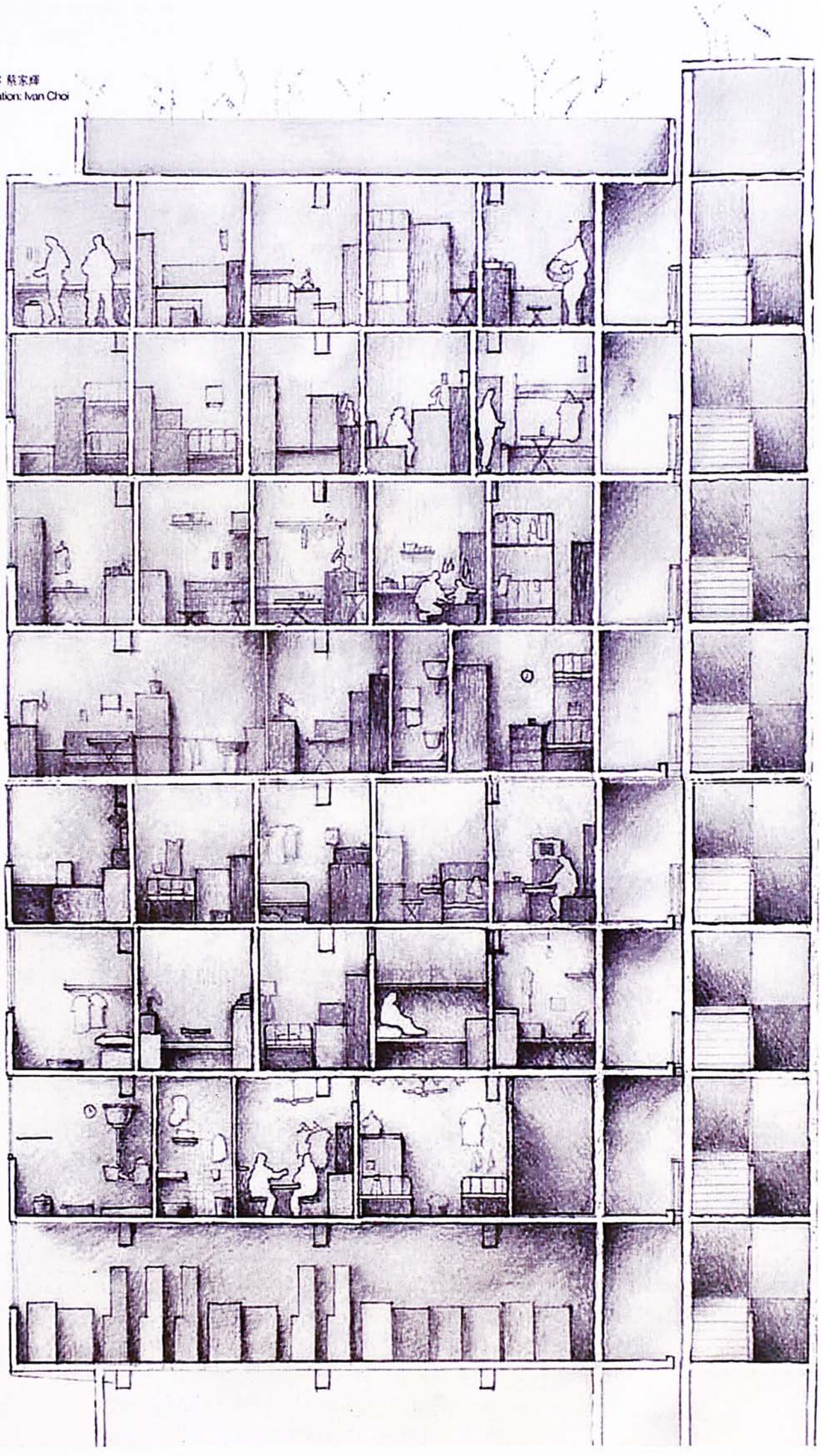
The following is drawn in 2006 through surveying in an existing building with the collaboration of social workers



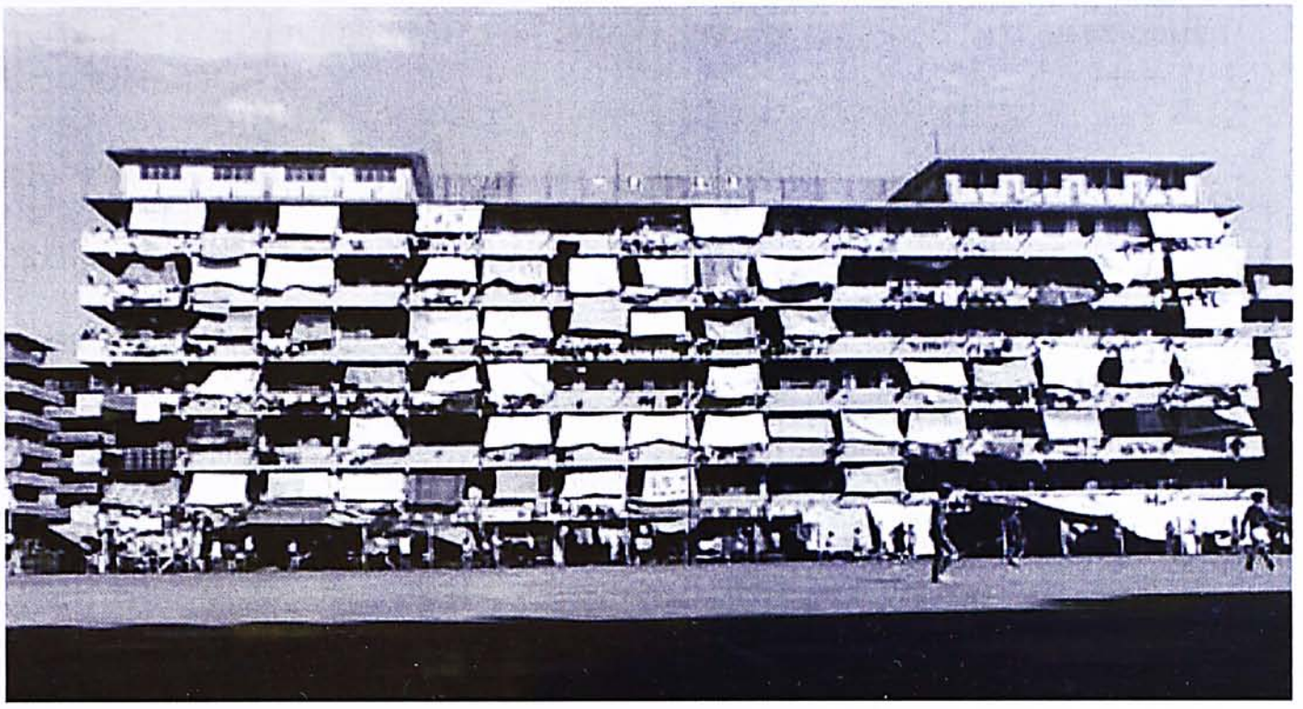

There are over 102 rooms within a 8-storey building and
the size of each rooms is about 2 metre x 2.5 metre. Most of people with mental illness settles in the bedrooms of the smallest size.

The environment is hot and noisy.
Children are not able to study
and the hygience condition is poor. Many people need to share a small toliet with unsufficient facilities Common area is used for sharing activities.

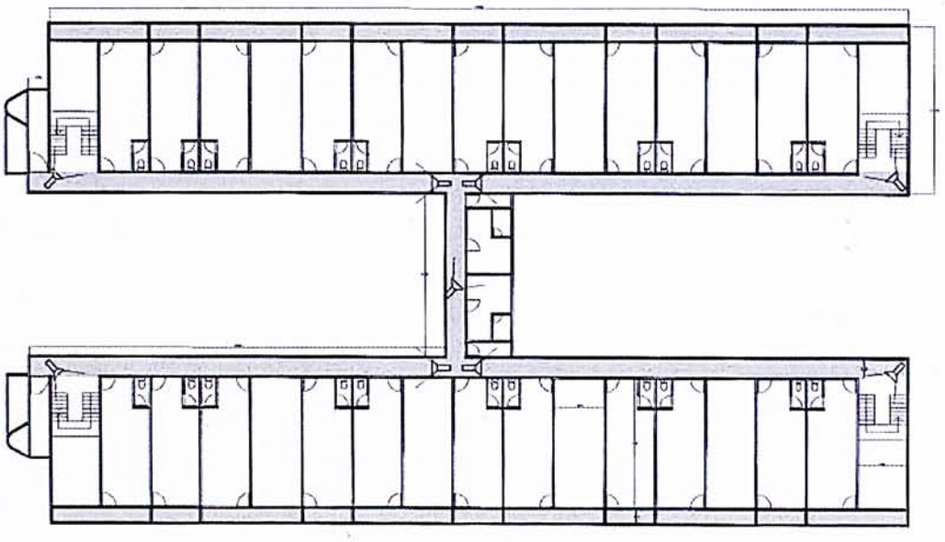
插圖：蔡宋燁
Illustration: Ivan Choi



**How is the overcrowding conditions in the past?**
**What is good and what is bad when compared to the housing nowadays?**



People extend their daily life activities such as cooking and playing at the common corridor because of lack of interior space. The sun shining devices perform like a participation of public art work. This can happen because of the openness and sharing of space provided.



**Why is it important to provide openness and sharing space in urban scale as well as in architectural scale?**

If there are n- windows and everyone put a shelters on the ways they like, there are 2^n possibilities. The combinations create the life pattern and animations of the building through history.

For n=112. There are at least, 2^112= 5192296853000000000000000000000000 possilbilities which are more the number of stars in our galaxy and that's the richness of life which is an important issue in the evolution and habitation of sustainable architecture.

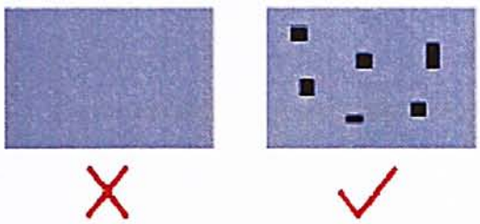
Openness also serves as a buffer zone to solve crowding problems.

**What are the factors of overcrowding conditions?**

Density and crowding can have an adverse effect on mood and even cause stress-related illness.

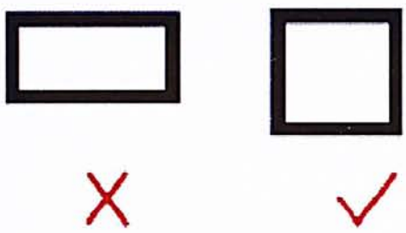
Factors that reduce feelings of crowding within buildings include:

## Elements to divide spaces



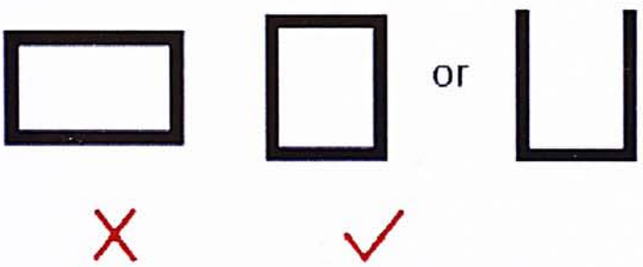
1. With simple elements such as partition wall or drawers, people may feel that the space is less overcrowded with other people or objects.

## Room shape:



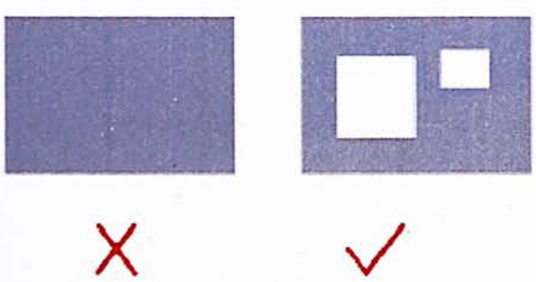
2. A square shape room feels bigger than a smaller one of the same area.

## High ceilings




3. A high or open ceiling is preferable to a smaller one.

## Windows and light



4. Room with sufficient daylight feels bigger than room of darkness.

What are the major age group of people in Sham Shui Po?

What will be the population increase?

表1：二零零六年至二零一五年按地區議會分區劃分的預測人口推算數字

| 地區議會分區/<br>主要區域 | 2005# | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 中西區 | 245 200 | 247 500 | 249 800 | 251 700 | 252 100 | 252 300 | 253 900 | 254 900 | 254 100 | 253 400 | 252 400 |
| 東區 | 151 100 | 149 500 | 150 500 | 150 900 | 151 700 | 150 600 | 152 000 | 152 300 | 151 100 | 150 800 | 151 400 |
| 南區 | 587 500 | 582 600 | 581 500 | 579 700 | 577 200 | 576 500 | 573 700 | 570 500 | 565 300 | 560 400 | 556 300 |
| 油尖區 | 275 500 | 276 900 | 284 200 | 283 700 | 283 400 | 284 400 | 282 700 | 281 500 | 280 100 | 279 100 | 287 400 |
| 深水埗 | 375 000 | 381 100 | 385 700 | 390 500 | 395 000 | 397 400 | 392 000 | 408 700 | 425 900 | 439 900 | 449 200 |
| 九龍城 | 371 200 | 367 000 | 368 800 | 370 100 | 370 600 | 368 400 | 376 900 | 381 700 | 421 700 | 439 600 | 448 300 |
| 黃大仙 | 434 000 | 426 000 | 429 200 | 426 700 | 423 600 | 422 700 | 426 700 | 423 600 | 416 400 | 413 200 | 409 200 |
| 觀塘 | 387 800 | 385 800 | 381 900 | 394 800 | 629 600 | 632 000 | 634 400 | 635 000 | 640 200 | 639 700 | 650 900 |
| 湾仔 | 302 000 | 296 300 | 306 200 | 311 100 | 313 100 | 315 900 | 320 300 | 322 200 | 321 700 | 323 300 | 329 400 |
| 東區 | 514 800 | 526 100 | 523 600 | 521 500 | 525 700 | 526 800 | 523 300 | 518 000 | 515 200 | 512 900 | 512 100 |
| 荃灣 | 258 000 | 265 800 | 265 100 | 266 300 | 265 600 | 266 600 | 265 700 | 267 000 | 269 400 | 268 600 | 269 400 |
| 屯門 | 493 300 | 488 400 | 488 400 | 489 600 | 489 300 | 489 700 | 487 400 | 489 600 | 510 100 | 515 500 | 513 700 |
| 元朗 | 551 000 | 550 000 | 555 000 | 565 500 | 582 600 | 592 300 | 594 300 | 619 000 | 632 800 | 644 800 | 650 600 |
| 北區 | 281 900 | 282 700 | 305 200 | 318 300 | 316 400 | 319 800 | 320 500 | 321 300 | 321 800 | 324 900 | 330 600 |
| 大埔 | 299 100 | 299 000 | 303 800 | 303 700 | 303 600 | 306 000 | 307 700 | 309 700 | 311 200 | 313 300 | 316 200 |
| 沙田 | 630 400 | 625 200 | 630 500 | 632 800 | 645 400 | 657 800 | 669 200 | 677 200 | 685 100 | 705 800 | 707 600 |
| 西貢 | 407 100 | 405 600 | 400 800 | 412 900 | 423 100 | 430 300 | 445 200 | 458 800 | 465 500 | 469 900 | 475 800 |
| 離島 | 135 000 | 139 000 | 145 700 | 151 000 | 154 700 | 157 600 | 159 100 | 160 300 | 163 500 | 159 900 | 163 800 |
| 分區總計 | 1 264 300 | 1 257 600 | 1 286 600 | 1 295 600 | 1 262 500 | 1 258 900 | 1 263 900 | 1 250 500 | 1 251 500 | 1 252 300 | 1 252 600 |
| 九龍 | 2 670 000 | 2 658 300 | 2 677 300 | 2 678 300 | 2 707 600 | 2 736 400 | 2 776 200 | 2 799 500 | 2 836 500 | 2 855 600 | 2 882 800 |
| 新界 | 3 367 800 | 3 422 700 | 3 455 400 | 3 711 400 | 3 558 500 | 3 796 300 | 3 812 400 | 3 930 700 | 3 997 500 | 3 939 400 | 3 975 600 |
| 總計(#) | 5 227 800 | 5 240 600 | 5 269 300 | 5 303 600 | 5 320 300 | 5 390 600 | 5 401 300 | 5 425 100 | 5 425 200 | 5 451 400 | 5 491 300 |
| 其他(非香港) | 339 500 | 339 900 | 339 300 | 383 700 | 438 300 | 473 300 | 422 300 | 435 600 | 444 400 | 456 000 | 464 300 |
| 陸上總計 | 6 932 200 | 6 936 400 | 6 955 300 | 7 056 200 | 7 123 600 | 7 256 400 | 7 253 500 | 7 320 000 | 7 365 600 | 7 448 300 | 7 510 300 |
| 加：水上人口 | 3 700 | 3 300 | 3 800 | 2 700 | 2 400 | 2 100 | 1 900 | 1 700 | 1 500 | 1 400 | 1 300 |
| 全港 | 6 935 900 | 6 939 700 | 6 959 200 | 7 058 900 | 7 123 000 | 7 258 500 | 7 255 400 | 7 321 700 | 7 366 900 | 7 449 700 | 7 511 600 |

#: 年中人口

19.79% increase

表2：二零零五年及二零一五年按主要年齡組別劃分的各地區議會分區內人口的分布比較

| 地區議會分區/<br>主要區域 | 年 | 主要年齡組別<br>0 - 14<br>(%) | 15 - 64<br>(%) | 65 +<br>(%) | 總計<br>(%) |
|---|---|---|---|---|---|
| 中西區 | 2005 | 12.7 | 75.1 | 12.3 | 100.0 |
| | 2015 | 9.9 | 72.1 | 18.0 | 100.0 |
| 東區 | 2005 | 11.2 | 74.4 | 14.5 | 100.0 |
| | 2015 | 8.5 | 71.5 | 19.9 | 100.0 |
| 南區 | 2005 | 13.0 | 73.2 | 13.8 | 100.0 |
| | 2015 | 10.1 | 71.7 | 18.2 | 100.0 |
| 油尖區 | 2005 | 13.5 | 73.4 | 13.2 | 100.0 |
| | 2015 | 10.0 | 74.1 | 15.8 | 100.0 |
| 深水埗 | 2005 | 13.7 | 73.4 | 12.9 | 100.0 |
| | 2015 | 13.5 | 73.6 | 12.9 | 100.0 |
| 九龍城 | 2005 | 13.2 | 72.6 | 14.2 | 100.0 |
| | 2015 | 12.9 | 69.1 | 17.9 | 100.0 |
| 黃大仙 | 2005 | 13.1 | 69.1 | 17.8 | 100.0 |
| | 2015 | 11.1 | 72.3 | 16.6 | 100.0 |
| 觀塘 | 2005 | 14.0 | 70.4 | 15.6 | 100.0 |
| | 2015 | 12.8 | 70.7 | 16.5 | 100.0 |
| 灣仔 | 2005 | 13.4 | 73.2 | 13.4 | 100.0 |
| | 2015 | 13.1 | 70.4 | 16.5 | 100.0 |
| 東區 | 2005 | 14.0 | 73.4 | 12.6 | 100.0 |
| | 2015 | 11.9 | 72.7 | 15.4 | 100.0 |
| 荃灣 | 2005 | 14.7 | 74.1 | 11.2 | 100.0 |
| | 2015 | 11.7 | 74.2 | 14.1 | 100.0 |
| 屯門 | 2005 | 15.6 | 74.4 | 9.9 | 100.0 |
| | 2015 | 12.3 | 76.1 | 11.6 | 100.0 |
| 元朗 | 2005 | 13.4 | 72.2 | 14.5 | 100.0 |
| | 2015 | 13.3 | 73.6 | 13.2 | 100.0 |

**Children and The elderly will becomes the most depriving age group.**

**What are the other possiblities and architectural solutions to the living problem ?**

1. Transfer the people to public housing, if it is possible.(by social-workers)
2. Design and promote flexible and low-price furniture for tiny space. (by designer /architects/government)
3. Design a peaceful/ soulful public space such as churches, plaza etc for the people to relax.

**Why are appalling space appalling and peaceful place peaceful?**
**What factors make space feel different?**

From my observation 5 factors are concluded and I try to explain it in mathematical descriptive way.

**Appalling space1: caged lodgers.**
**There are 2 types: the first type is made by cage. the second type is made by wood panels.**

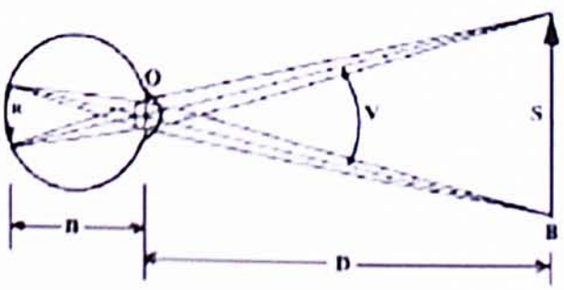
**Observation 1 and deduction of Factor 1.**
**Perceived mass**

**The space is small and the mass become compressive.**

**To be more precise, the "perceived mass" is too big because of the short distance between the eyeball of the sleeper and the perceived surface, so that a strong sense of compression is created to the lodgers.**

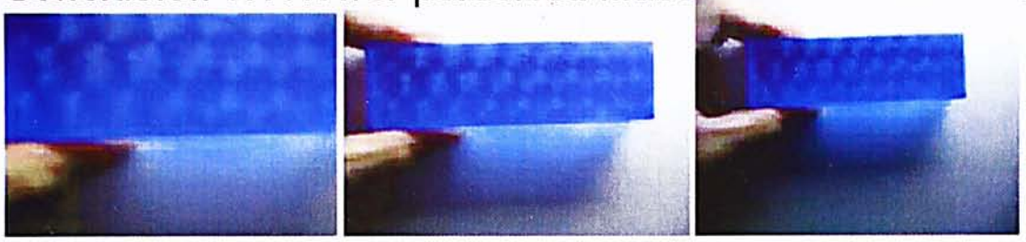
**The logic is the same when you point a finger to your eyeball, the closer your finger, the stronger the sense of compression and stress will be created. Long team stress creates unhealthy effect.**

**For one point perspective, the perceived mass of area A is (n/D)A, which is inversely proportional to D.**



An counter example will be the high ceiling of church, assuming both are in similar lighting conditons. People stay in the high ceiling of church feels more relax and peaceful than that in the tiny house.
Because of the increased D to the observer.

Conclusion 1: A lower perceived mass creats a less stressful environment.



Experiment showings the decreasing perceieved mass from left to right

It can be reduced by two approaches:
1. increase the distance. 2. reduce the actual mass.


--> 

Smaller and thinner materials

Example 2.

more relaxing and peaceful more stressful

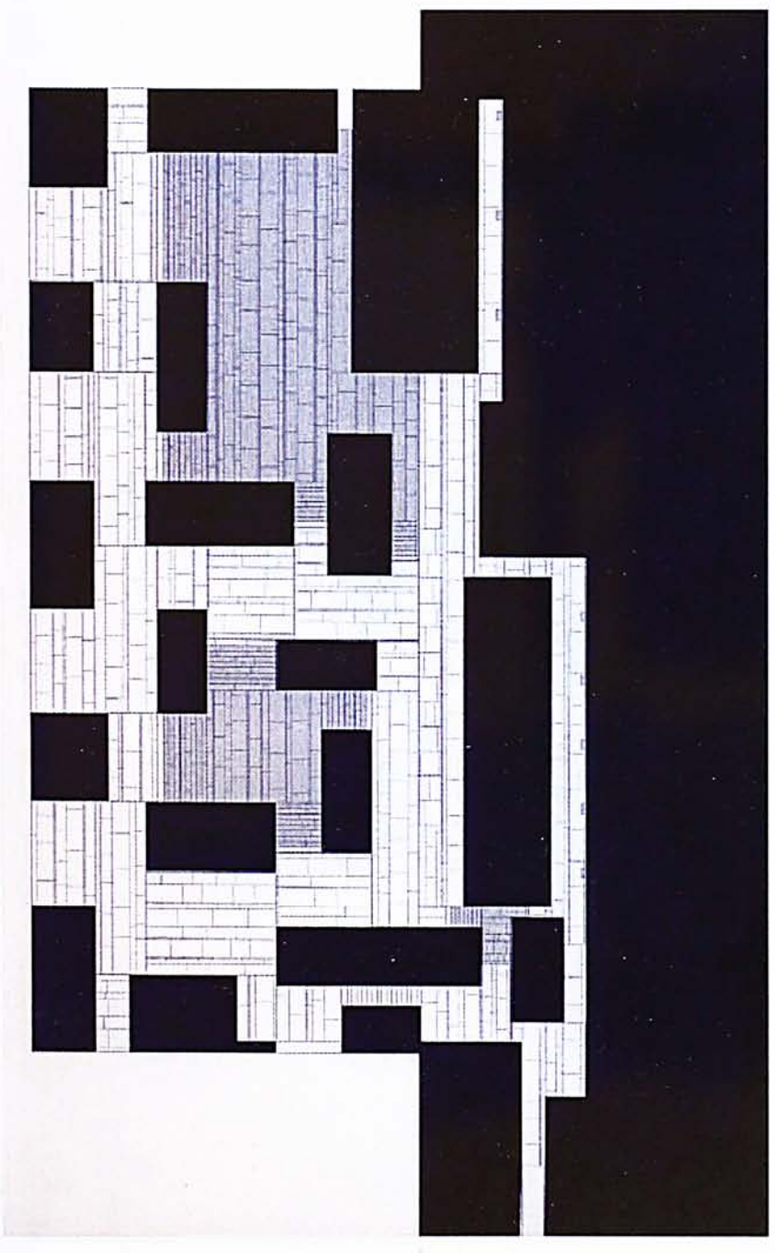
Regardless of other factors, we feel more peaceful for thinner columns than thick columns because of the effect of mass.

Example 3.

less dense Higher dense

**Conclusion 2: Smaller perceived mass should be applied for people under high stress.**

Example 4.



**Explanation of effects created in the thermal bath of peter zumthor.**

**By the carefully control of the variations of mass, and variations of paving stone patterns, the change of feelings can be created architecturally by providing different experience to the people.**

**Be reminded that some space are big and the effect of mass is counted to be less than a finger pointing very close to your eyes.**

**Tiling breaks down big mass into smaller pieces so that it feels more peaceful.**

Example 5. The bacelona pavillion by Mies

Thinness of wall,slabs and columns created a more peaceful effect than the bulky ones.

Thinness of window frame aslo create a more peaceful effect.

A long distance and long persepective created a more relaxing effect.

Observation 2 and deduction of Factor 2.
On the effect of Horizontality, verticality and human protection zone.

This is deduced by the observation of cage and the comparision between vertical and horizontal architectural features.

(Image from http://static.flickr.com/68/156161071_6b54bf35d1.jpg)

**Horizontal elements perceptionally seems to be more peaceful and less aggressive than vertical elements.**

**Elements close to the head is more disturbing than elements close to the foot.**

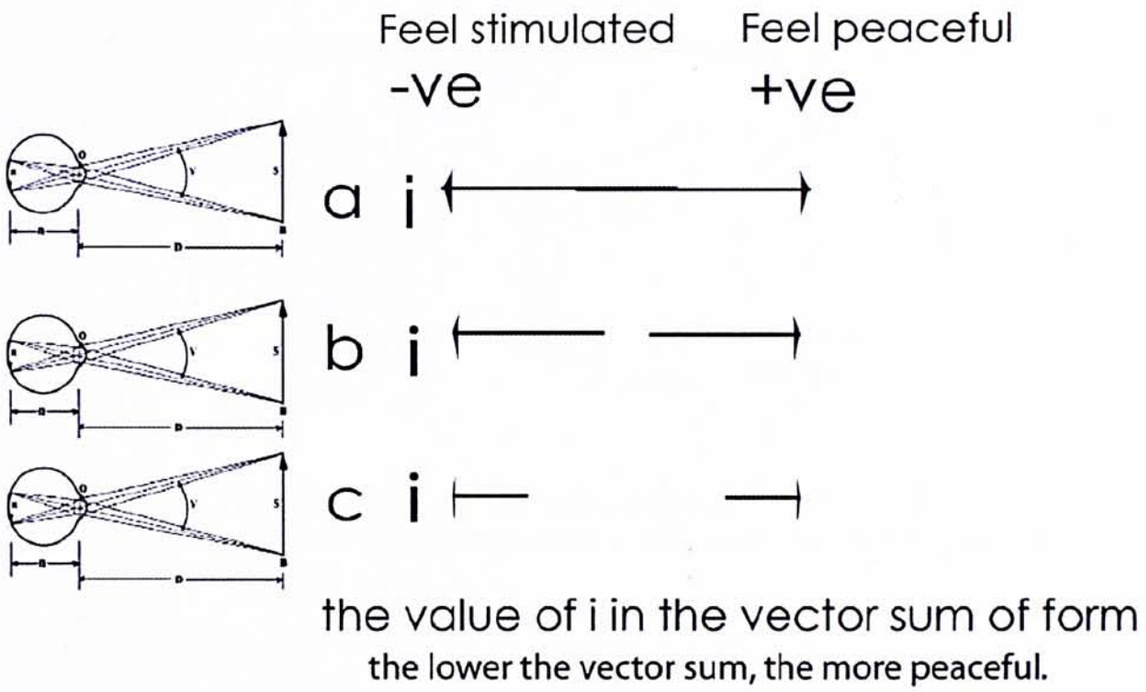
Conclusion 1:
Of similar mass, more horizontal elements should be used than vertical ones in order to create a less stressful environment.

**Why are horizontal one more peaceful than vertical ones?**
Generation of the hypothesis of Vector theory

Assume we perceieve elements in forms of vectors, but not lines and vectors pointing towards your eyes/ your protection zone will create a stronger sense of aggression due to our fudamental ability of human-being to protect ourself.

Now, we defined the aggressive vector as negative while the less agressive vector as positive. The negative ones create a sense of stress while the positive ones create the sense of relax.

The eyes were choosen as experimental area because it is the weakest but important part in our body and it may create the strongest effect.




the value of i in the vector sum of form
the lower the vector sum, the more peaceful.

**Self-Criticism of the theory**

**The value of a, b, c is arbitrary as it can only be act as a conceptual descriptive magnitude of the disturbance. I don't know whether a longer arrow is more disturbing than a shorter one. It may be deduced by further Obtrusive Data Collection Methods from further experiment. Directions can only defined by sensation.**

**The Explanation of the "railing effect"**

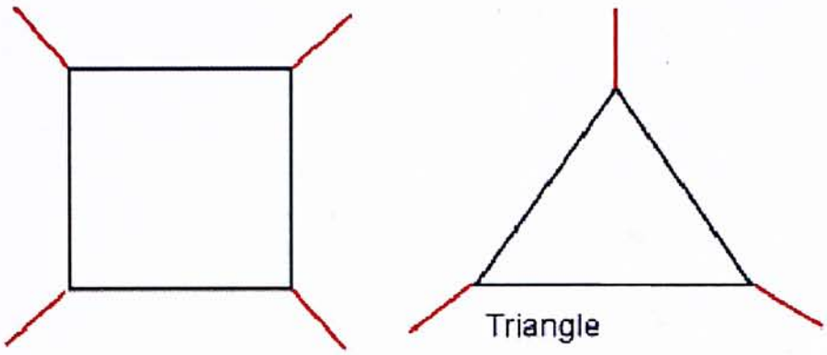
**When you look from the top of the railing, the vertical elements point towards your eyes and you feel it less peaceful and more stressful, while the horizontal ones do not point towards you so you feel more peaceful.**

## Further Elaboration of the Vector theory

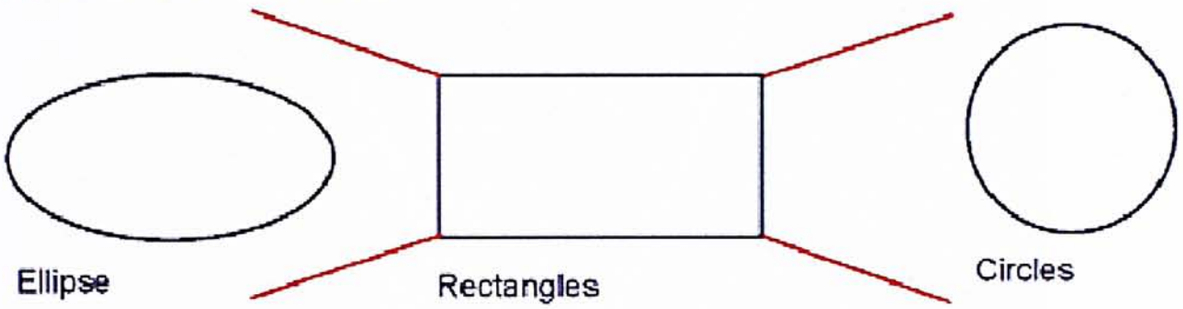
**Why does forms give feelings ?**

**1. On geometry 2. Architecture 3. on Art and Nature**

Basic geometry in architecture regardless of perspective includes:

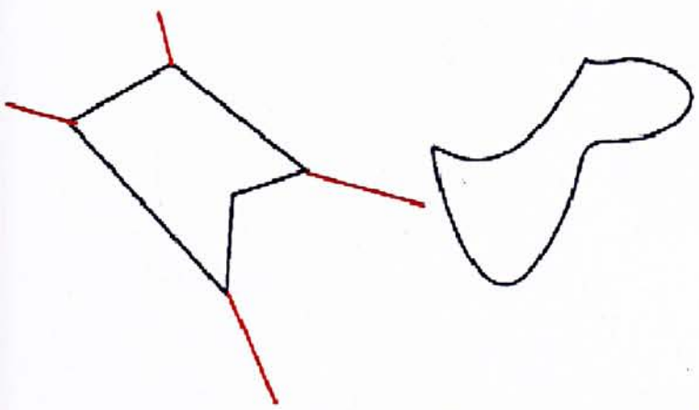



**Because of the symmetrical and balance properties of the forms, they are defined as "balanced form."**




**Ellipse and circles because of the balance of curvations are defined as "Zero form." which can create a more happy effect to the observers. Ellipses and rectanges are "directional forms"**

**Other non-Zero Forms includes:**



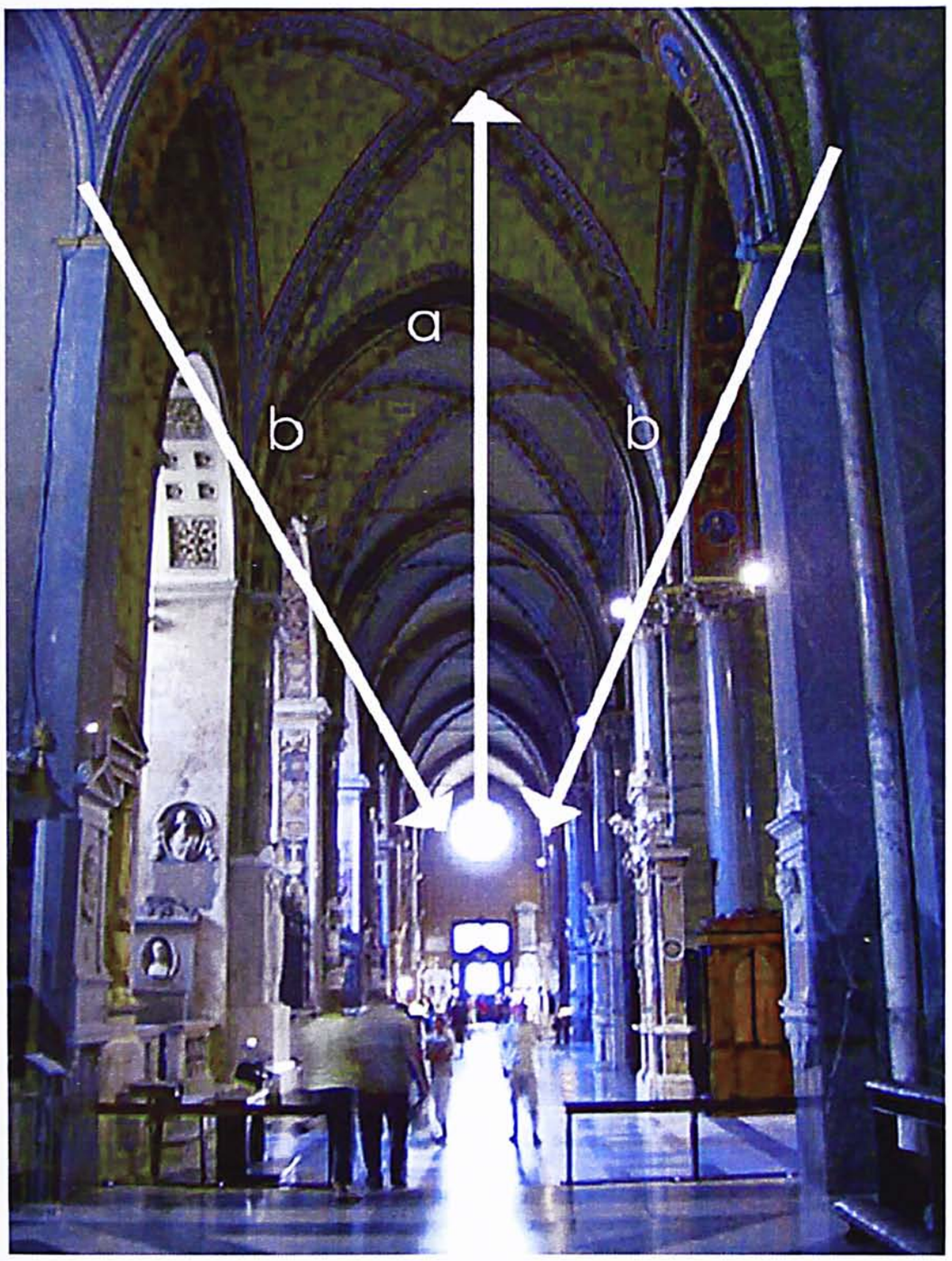
**more exciting and aggressive** **more joyful**

**Because of the effect of perspective, most of the forms perceieved are not balanced form.**

**2. On Architecture**

Example 1.

comtined effect of positive vectors as well as longer distance




Conclusions 2

**Church architecture often tends to be more soulful.** and this kind of architecture may be good for a place for the settlement of the deprived. Some curvy elements may be neccessary to create a joyful effect.

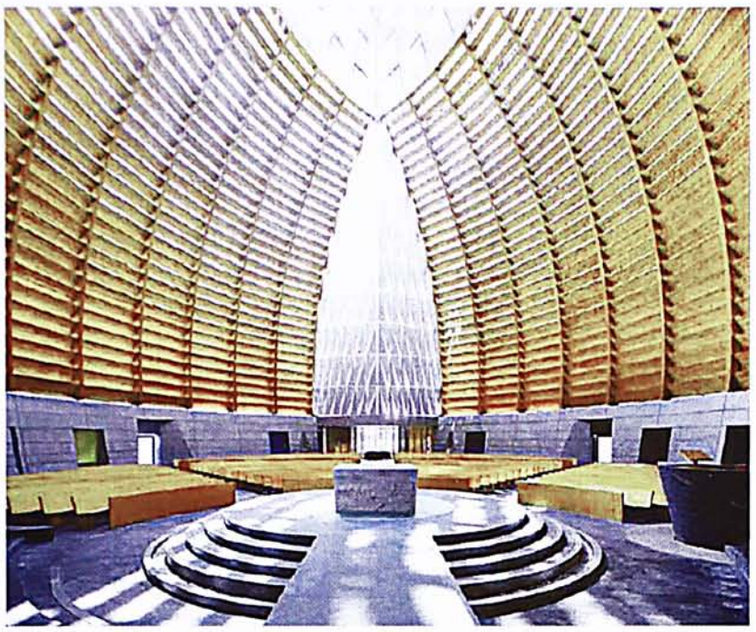
Example 2.

Multi- directional vectors creates a more exciting environment. It may be not suitable for peaceful architecture but it may be suitable for architecture such as sport centres or museums which intend to activate people.

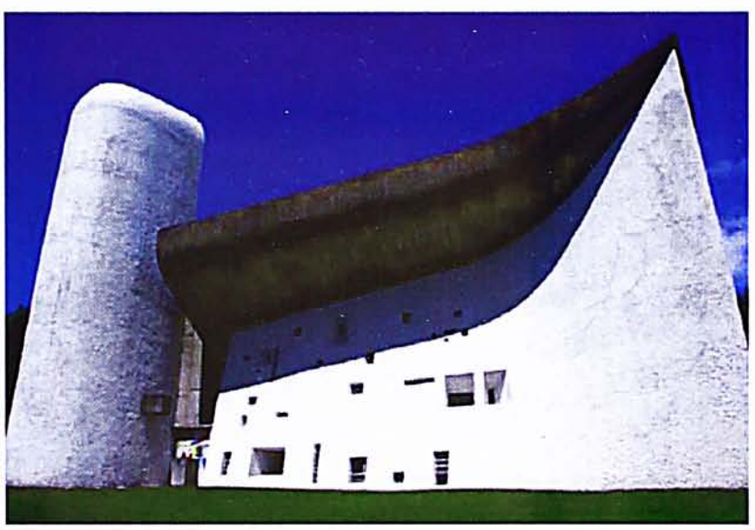
Conclusions 3

Partial application of this kind of languages may help to induce new energy and revitalize a deteriating districts. The Langham place in MongKok is one of the examples.

Example 3.



mixed use of positive upward vectors as well as the curvy vector creates a sense of joyfulness as well as the sense of security.



Conclusion 4
This kind of space is good for targets such as aged singletons, street-sleepers who requires a stronger sense of protection and security.

This kind of language is found in nature. The feelings of form may also related to our memory towards danger and secure.

**Are there any hierarchy of the factors to the perception of space?**

"Ultimately, light is the most effective element in creating a sense of mystery and awe, and the manipulation of light is principal agent in the creation of shrines and religious buildings."

"Johann Wolfgang von Goethe discussed optics and the physiological effects of colours in 1810. A recent study illustrates gender sensitivities to colour as females seem more color conscious and there colour taste more 'flexible and diverse."

" When a person is exposed to the colour red dramatic physiological effect's may be observed including the release of adrenalin, elevated heart rate, and an increase in gastric activity - hence the practical use of red or red-checked table clothes in restaurants.

" The application of orange and reds (warm colours) to interior's or the use of interior accents, such as candles, with low-level light output, serve to enhance an intimate psychological effect when applied to dining."
" pulse rates of people recorded accelerated heart rates when in a grey room than in a colorful room (Kuller 1976)"

Conclusions 4
For programs such as fruit markets and restaurant in Sham Shui Po, some orange or red colors may be applied to enhance the psychological effect of buyers in order to enhance the business of the sellers.

Example 1. Ron Champ by Le corbusier. The effect can be explained by the combined effect of the positive vector of windows as well as the low-level light intensity of the space. This kind of space is good for people to settle down in a stressful environment.

The low intensity of light with combined effect of colors create spatial quality where children can settle down and becomes more peaceful and joyful.

The comparsion of spacial quality of study area of a child in an overcrowding area of Sham Shui Po. This soulful spatial quality should be provided in public area for the temporary settlement and place of solitude for children under poverty in order to create a better generations of our future.

Example 2. LIghting conditons in thermal bath. The low momentum and intensity of light creates sense of peaceful environment to the people.

**Why are color important to the deprived people in Sham Shui Po?**

**Colors, like features, follow the changes of the emotions. - Pablo Picasso**

What Is Color?
In 1666, English scientist Sir Isaac Newton discovered that when pure white light is passed through a prism, it separates into all of the visible colors. Newton also found that each color is comprised of a single wavelength and cannot be separated any further into other colors.

Further experiments demonstrated that light could be combined to form other colors. For example, red light mixed with yellow light creates an orange color. A color resulting from a mix of two other colors is known as a metamer. Some colors, such as yellow and purple, cancel each other out when mixed and result in a white light. These competing colors are known as complements.
Color Psychology - The Psychological Effects of Color
While perceptions of color are somewhat subjective, there are some color effects that have universal meaning. Colors in the red area of the color spectrum are known as warm colors and include red, orange, and yellow. These warm colors evoke emotions ranging from feelings of warmth and comfort to feelings of anger and hostility.

Colors on the blue side of the spectrum are known as cool colors and include blue, purple, and green. These colors are often described as calm, but can also call to mind feelings of sadness or indifference.
Color Psychology as Therapy
Several ancient cultures, including the Egyptians and Chinese, practiced chromotherapy, or using colors to heal. Chromotherapy is sometimes referred to as light therapy or colourology and is still used today as a holistic or alternative treatment.

Red was used to stimulate the body and mind and to increase circulation.
Yellow was thought to stimulate the nerves and purify the body.
Orange was used to heal the lungs and to increase energy levels.
Blue was believed to soothe illnesses and treat pain.

Indigo shades were thought to alleviate skin problems.
Most psychologists view color therapy with skepticism and point out that the supposed effects of color have been exaggerated. Colors also have have different meanings in different cultures. Research has demonstrated in many cases that the mood-altering effects of color may only be temporary. A blue room may initially cause feelings of calm, but the effect will be dissipate after a short period of time.

sources from
http://psychology.about.com/od/sensationandperception/a/colorpsych.htm

# Part II

# Documentation of exhibition projects

## What had happened? What may happen ? what should happen?
## What was the concept ?

Community art and architecture - Ivan Choy

Closing my eyes, there are millions of stars. We, as well as the stars, are miracles. In this heart-beat lifetime, we live, work and shine in a place and at a moment in time, we became the beautifier of our place and our mind. Lovers say "you are one in a million." "One", a romantic and precise word becomes the sign of existence and permanence, the moment in eternity, the truth in simplicity and uniqueness. It is a treasure, a drop of water in the chaos of history and our mind.

Urban space and architecture in a city is not different from a star. It is an event in a unique time when millions of minds and hands become one. Everyday, we dream and work. Dreams become real and what is real created the art of the possible.

"Oneness" and "Allness" have long been the ultimate boundary of mind. In Chinese philosophy, "One by nature, the first begot the second, two produces the third; the three created all things" The metaphysical meaning of "one by nature" is without any limitation and the depth is the source of whatever is, out of millions, as if what we are and what we can be. "What can you do, paper?" "I can be a million things you can imagine." Art becomes public art when everyone becomes one where there exist no differences and discriminations. There are no differences among the rich and the poor, the young and the old, the useful and the useless. "Things" become everything useful and useless. The use of "uselessness" created what are possible.


Everything seems to be one in a million but everything is different. This symmetry can almost be found in every scale. From the scale of a black hole to the scale of a drop of water, from the scale of the galaxy to the scale of Archimedes spiral in a screw, there is a tiny world where millions can be found within. "One" becomes the sign of both uniqueness and diversity. It generates and offer multiple readings and identities. Sham Shui Po, a place of "poverty" and at the same time, a place where life, heritage and culture meet, is one of the examples in Hong Kong.

'Mountain's steep, Ocean's deep, Earth is wide, Heaven is high, Men's dignity, soul have we. Wide world broadens our mind, Ages ripe our fruits. "Million miles, Nations prosper all in our sight, Thousand years, Olds and news weave realm of the light, Uncounted gods' descendents, East and West and North and South do have their saints. "Nothing left, in my hands, Journey's long, never ends, In the Chaos, In my flight, Starved is my flesh, forged is my soul, Let's march over life, Let's sing when we're tired, Pick the loads unbearable in our youth, Let's walk hands in hands. "

This is the new Asia College Anthem wrote in Sham Shui Po on Kweilin street by Dr. Ch'ien in 1949, the founder of New Asia College of the Chinese university of Hong Kong. The lyrics laid down the principles of living and learning for all members of the college and more important the Confucian spirit and Chinese culture, "the unity of heaven and humanity." The concept of ultimate oneness is the one of the main spirits of the Chinese, Chinese architecture and Chinese art.

"One", the product of miracles, the sign of unification and completeness has long been many seeking for. It has been the index of beauty and harmony for both western and Chinese scientists, philosophers and artists. Scientists nowadays are working on the string theory, the ultimate theory and try to unite the paradox between quantum mechanics and relativities by the intervention of a beautiful tiny string. Artists and architects especially in Hong Kong have been working on community participation and consultation for the unification of public spirit. Thousands years ago, western Greece architects and musicians believed that architecture is the frozen music. Today, scientists are proofing that everything is in fact music governed by the vibration of tiny strings. If art is music and everyone represents a note and a frequency, community art will be a piece of united symphony, one in a millions, as if what is happening in nature and our culture.

Community art, a kind of public art, stands for art objects exhibited in public areas or outside museums and galleries and it belongs to the public. The most traditional of which are sculptures and murals. New forms include videos, happenings and even social events, which found their ways in the 1980s. Public art can also serve a social function. It is not just an art object to be viewed aesthetically. It can be interpreted as a channel to "present community interests" in public space. There are new concepts in public art such as site specificity and functionality emphasizing an interactive relationship between the works, locations, and their viewers or users.

In the past three years, Iman Fok, social worker of Soco, Timli , artists and architect of housing department and I, one of the residents of Sham Shui Po, exhibition designer and a architectural student of CUHK had been using folding beds and carton paper as experimental and symbolic installation art elements for exhibitions in old buildings in Sham Shui Po and other districts. It was exhibited from the Venice biennales in 2006 to the cubicle house in the poorest district of Sham Shui Po last year and to the heritage discovery centre of Hong Kong. In Life in west Kowloon exhibition one doesn't simply serve as an artwork, it arouse public interests and concerns on the redevelopment issue and poverty issue in Sham Shui Po and this year it is exhibiting at the origin of New Asia College. It arouse public concerns on the richness of life in Sham Shui Po and it shows important characteristics of her history and architecture to the public and more important these are activities for charity. The money earned is used for the support the poor and the elderly.

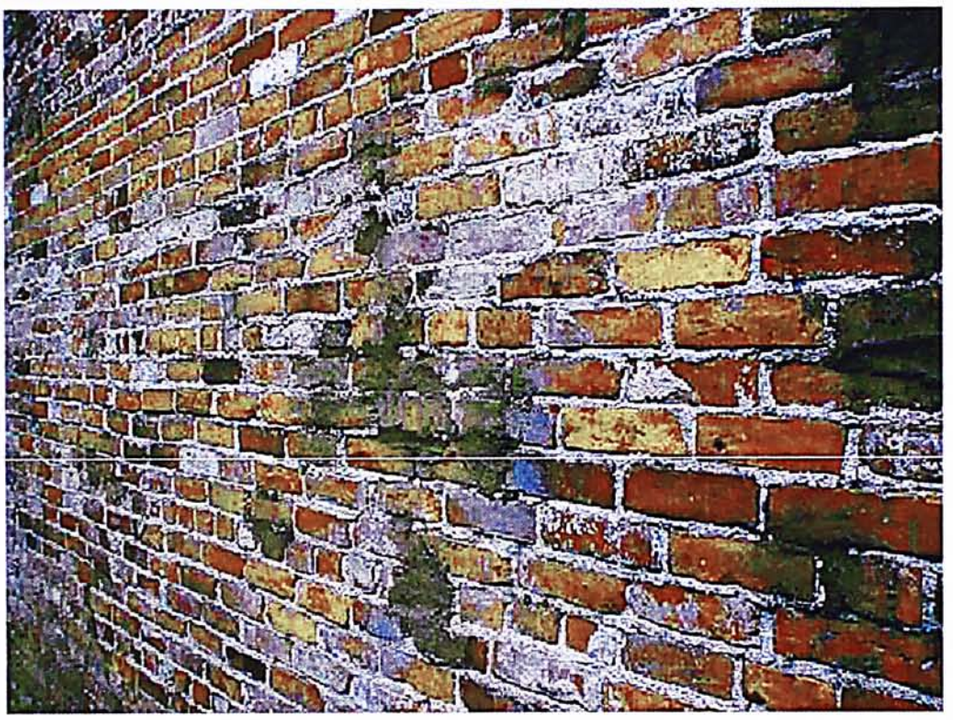
If art is the foundation of architecture, architecture is a kind of art. How "art and science", and "nature and humanity" be united in architecture and how community art be united with architecture for community as a kind of public interest are important questions to me. The role of artists and architects seem not to be singular and dissociated. Shall the greatness of art and architecture be the transformation of its circle from one to a million?

There are two public issues that many are interested, recently. It may be the elements for social event or public art. The first one is poverty and the redevelopment of Sham Shui Po, by statistic in SocO there are around 800 beggars in Hong Kong and the second and more important one is heat island effect in different districts of Hong Kong. In this thesis, I want to use public art and architecture as an event to deal with these social issues.

## Should there be architecture which helps to promote community participation

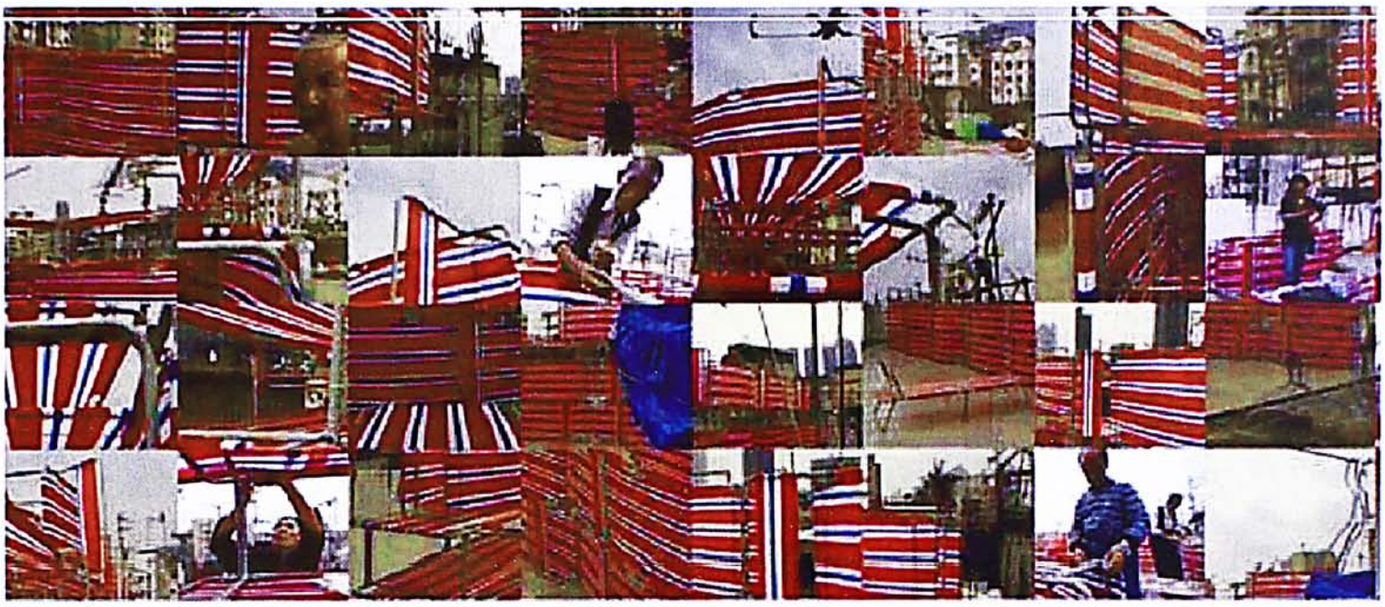
A well constructed public art can result in benefits by:-making the district or town a more attractive place for businesses to locate.-Stimulating the local economy through creating employing and seeding and developing skills.-Encouraging tourism by giving an area a competitive edge in relation to competing visitor destinations.-Contributing to local distinctiveness by giving a voice to local artists and craftspeople and opportunities for artist elsewhere to utilize their skills.Humanizing environments, involving the community and creating a cultural legacy for the future.

## Project1
## What can be learnt from past projects and how can be applied to architecture

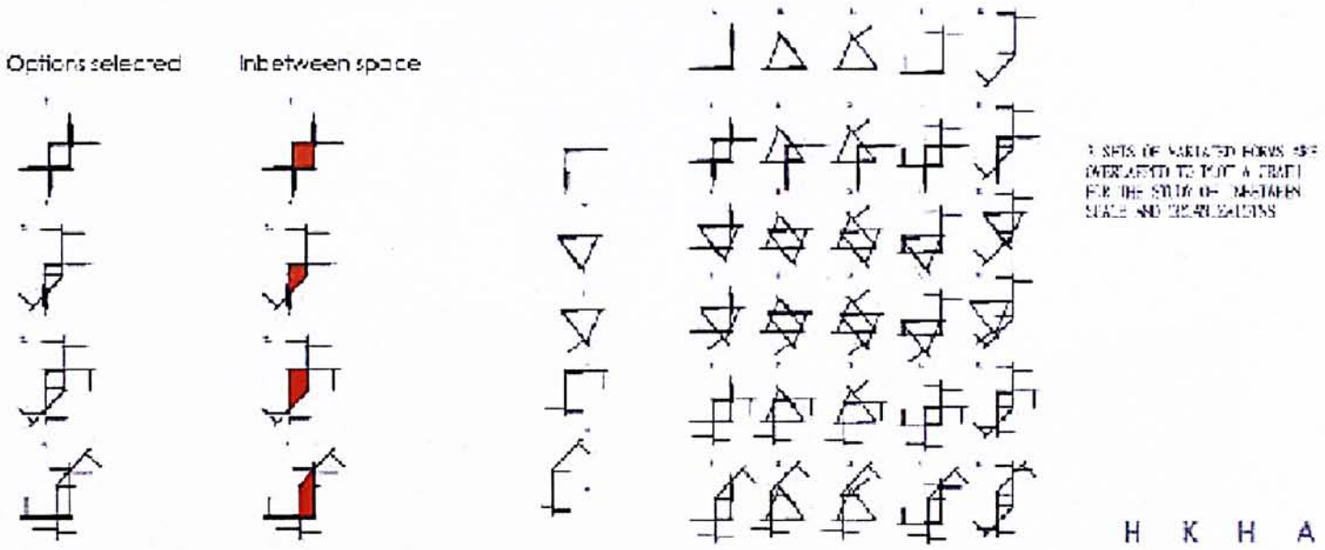


By breaking down elements into units, public may be able to participate.

## How units may help to partcipate ?



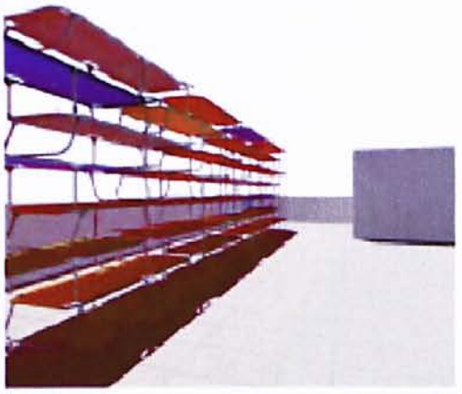
## How was it developed?




The advantages of flexibility helps changes too.

## How was it developed?

02



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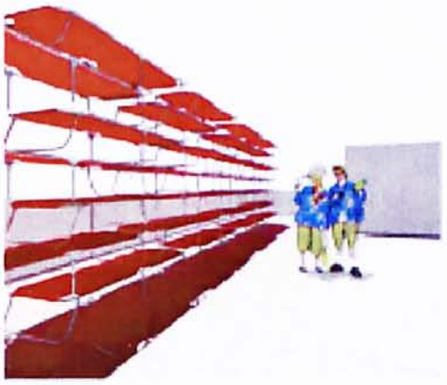
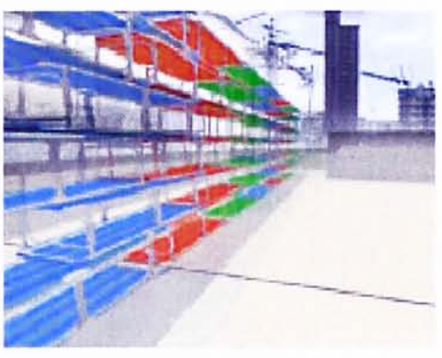


陽光及結構之研究

04

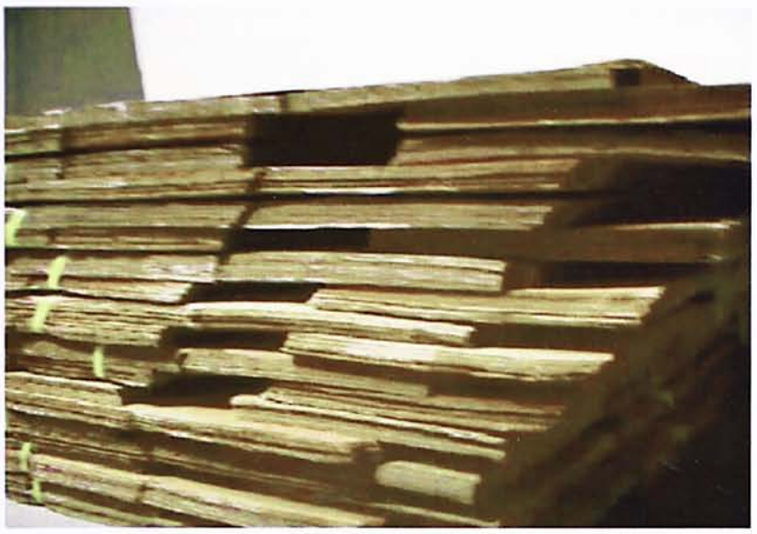
05



COMPUTER RENDERING FOR THE STUDY OF COLOR AND PERSPECTIVE

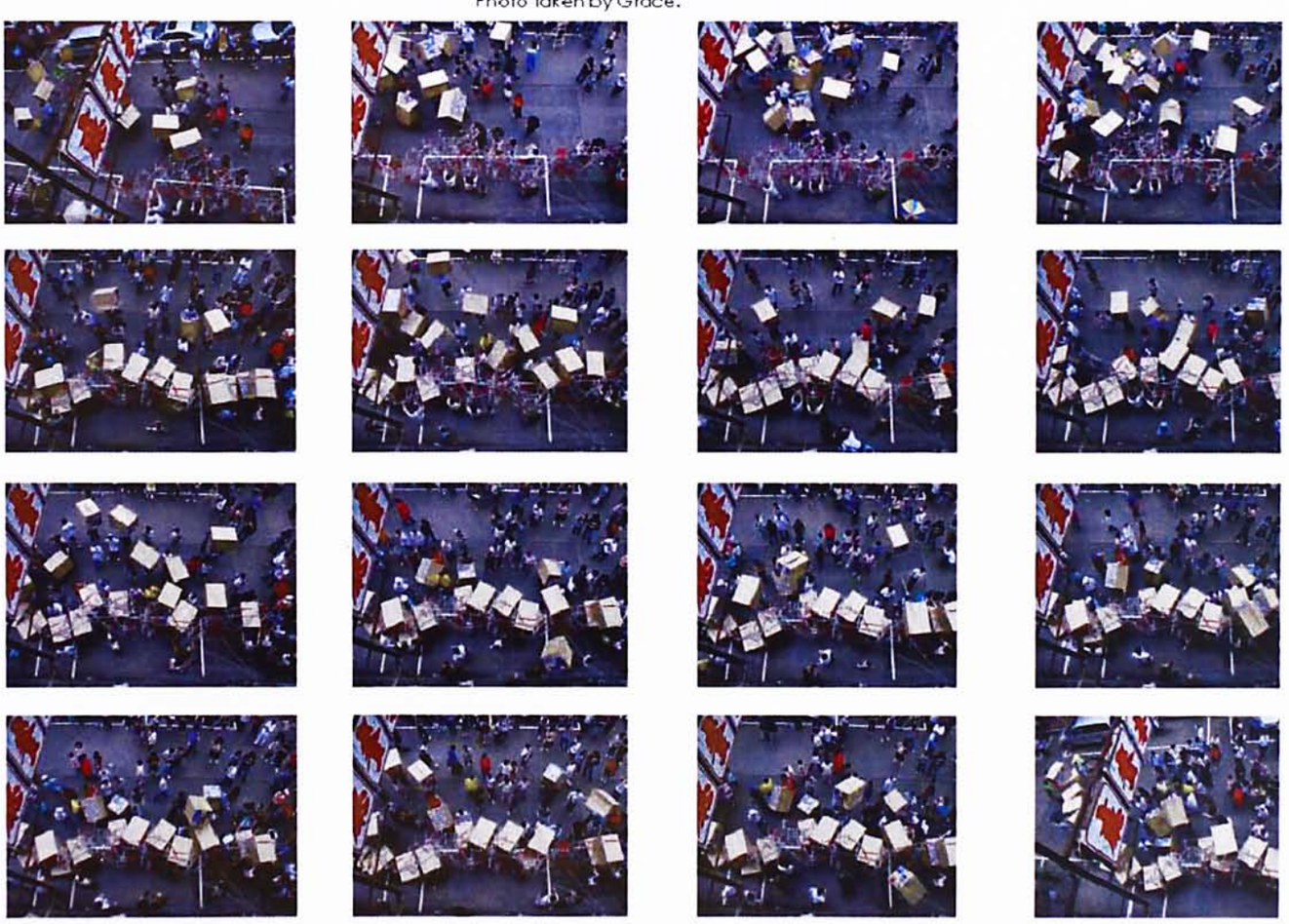
色彩之研究

## Project 2

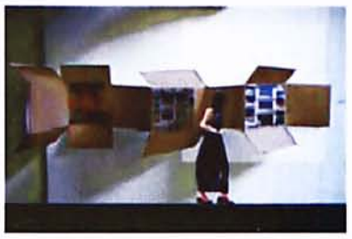


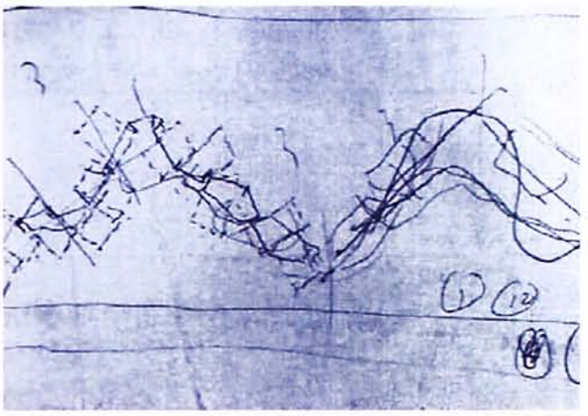
By breaking down elements into units, public may be able to participate. The same logic was applied.

Participation is animation 動. 生命力 Participation is an animation, documentation of life in west kowloon2 in June,2008. Photo taken by Grace.



## How was it developed?





### Participation as a tectonic animation

Participation is the operation.

### System of community art in Sham Shui Po:

Community meeting ----> Design for partidpation ----> selection and co-operation with public ----> Live artwork.

### Proposed System for architectural design in Sham Shui Po:

### Community meeting ---->

**What can further happen and related to architecture? why?**

# Visual and social animation

- life is art; Planting as art.

Community art humanizes the environment as well as giving happiness to the minority and our next generations. Architecture should be the same: A flexible and participatory configuration both for the elderly and the young.

Musée du quai Branly vegetated "Vertical Garden" wall by Patrick Blanc in Paris, France. Courtesy Greenroofs.com

Changi General Hospital in Singapore. The Hydroponic installation on the balconies of over 1,000 hospital patients. Courtesy Greenroofs.com

**Project 3 2008 in CUHK**

# The orange experiment

on the effect of openness and probabilities, visusal momentum and flexiblities.
The oranges were put near the window with sufficient sunlight on the ground. different events happened.


The situation is very similar to that under the highway of Sham Shui Po.

# Part III

# Design philosophy

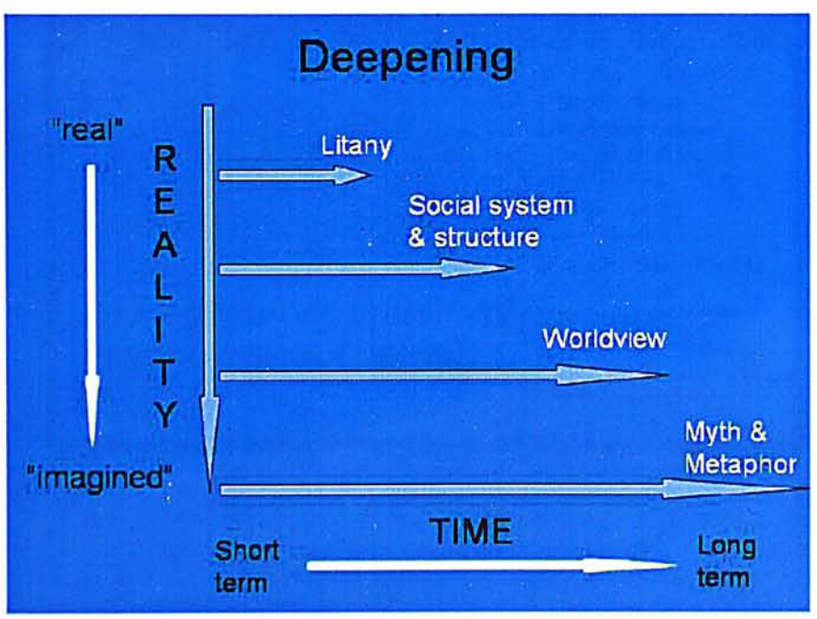
Causal layered analysis
From Wikipedia, the free encyclopedia
Jump to: navigation, search
This article includes a list of references or external links, but its sources remain unclear because it lacks inline citations. Please improve this article by introducing more precise citations where appropriate. (September 2008)

Causal layered analysis (CLA) is one of several futures techniques used as a means to inquire into the causes of social phenomena and to generate a set of forecasts as to the future course of the phenomena.

As a theory, CLA seeks to integrate empiricist, interpretive, critical and action learning modes of knowing (loosely, science, social science, philosophy and mythology). As a method, its utility is not in predicting the future but in creating transformative spaces for the creation of alternative futures. It is also likely to be of use in developing more effective — deeper, inclusive, longer term — policy.

Causal layered analysis consists of four levels: the litany, social causes, discourse/worldview and myth/metaphor.

The first level is the litany – the official unquestioned view of reality.
The second level is the social causation level, the systemic perspective. The data of the litany is explained and questioned at this level.
The third level is the worldview/discourse. Deeper, unconsciously held ideological, worldview and discursive assumptions are unpacked at this level. The way in which different stakeholders construct the litany and system are also explored.
The fourth level is the myth-metaphor, the unconscious emotive dimensions of the issue.
The challenge is to conduct research that moves up and down these layers of analysis and thus is inclusive of different ways of knowing. Doing so allows for the creation of authentic alternative futures and integrated transformation. CLA begins and ends by questioning the future.



Views

The below listed out some extremes of concepts and social values which are both describable to human as well as the quality of Architecture.

## Human <-> Architecture

## Psychology <-> Environment

## Designs are going to shift or even reverse our normal concepts and the sensation of space.

1. [The most useless]
2. [The Stressful]
3. [The most Violent]
4. [The saddest place]
5. [The fastest]
6. [The Noisiest]
7. [The Chaotic]
8. [The most dangerous]
9. [The darkest]
10. [The most inactivated ]
11. [The lowest technology]
12. [The most repressive]
13. [Permanence]
14. [Poverty]

1' [The most useful]
2' [The most relaxing]
3' [The most Peaceful]
4' [The most enjoyable place]
5' [The most static]
6' [The most silent]
7' [The tidest]
8' [The sercurest]
9' [The lightest]
10' [The most energetic]
11' [The highest technology]
12' [The most Expressive]
13' [Impermanence]
14' [Richness]

**Re-position is to redefine the positions of concepts**

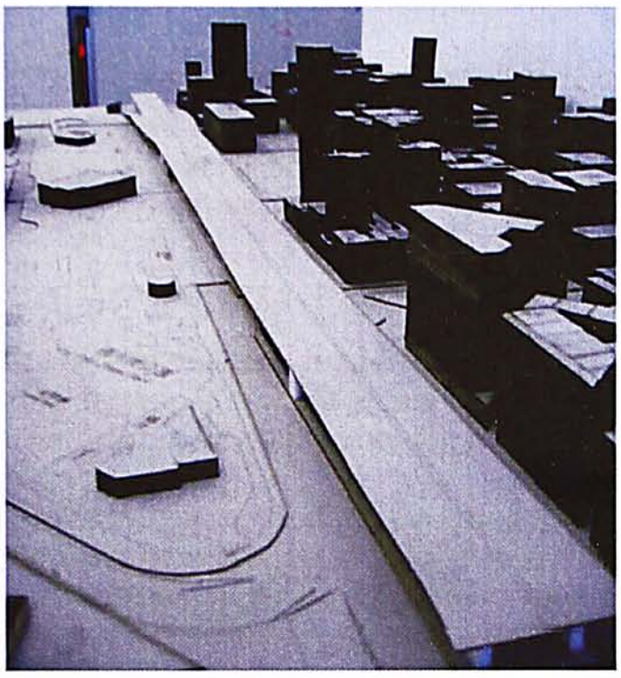
[Ought not to be] --> [Ought to be.]

**It is a physical, social and psychological Explosion.**

[The most useless]
[The Stressful]
[The most Violent]
[The saddest place]
[The fastest]
[The Noisiest]
[The Chaotic]
[The most dangerous]
[The darkest]
[The most inactivated ]
[The lowest technology]
[The most repressive]
[Permanence]

[The most useful]
[The most relaxing]
[The most Peaceful]
[The most enjoyable place]
[The most static]
[The most silent]
[The tidest]
[The sercurest]
[The lightest]
[The most energetic]
[The highest technology]
[The most Expressive]
[Impermanence]

Todays situation



Related World Views and speculation


Underground automated highway


Zero Emission vechicles

Smart Road, Smart Car:
The Automated Highway System
by Nita Congress

---

... I take to the open road,
Healthy, free, the world before me,
The long brown path before me leading wherever I choose.

-- Walt Whitman, "Song of the Open Road"
Convoys of trucks moving along an automated highway -- their distance from each other never varying, their speed never slacking, their course never wavering. ... Despite fitful rain and heavy fog, the bus driver never peers uncertainly into the gloom but unhesitatingly follows roadmarkers, avoids obstacles, and maintains her lane and her speed. ... Platoons of cars follow each other at regular intervals. But when the progress of one car is halted by an emergency, the others smoothly, swiftly, simultaneously shift lanes. ... Automatic braking lets even those with mobility impairments drive cars.

That's the world of the Automated Highway System (AHS). And it's coming soon.

The Vision
America is a nation of cars. But our reliance on cars and a rapidly aging highway infrastructure is compromising our safety, promoting congestion, sacrificing efficiency, and costing us money. Intelligent Transportation Systems (ITS) technologies -- existing and proposed -- offer the best solutions to a broad range of problems. An automated highway system, one which lets control information pass among vehicles and the infrastructure, will combine ITS technologies to maximize safety and efficiency and relieve congestion and associated costs. These technologies will probably include collision warning and avoidance devices, guidance devices, electronic brakes, electronically controlled steering, and other sensors to supplement -- and ultimately, perhaps, replace -- human driving judgment.

---

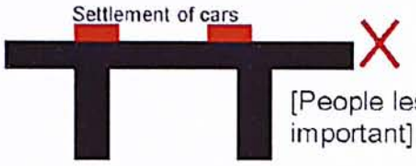
"We could go off technically and do something that would work in less time, but we'll come up with a much better plan by listening to the voice of the customer."

---

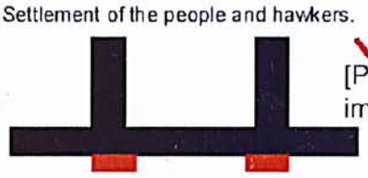
The results will be more predictable arrival times; better use of existing roadways, saving the costs of constructing new highways; significant reduction in traffic accidents; conservation of energy resources; reduced travel times; and reduced traffic congestion (see Major AHS Goals).
It's only natural to assume that intelligent systems will be applied in the highway setting. Such systems are permeating all aspects of our work and recreational activities. Also, many of these systems are now or will shortly be available on vehicles. But the AHS story is about much more than the inevitable march of technological progress. It's also a story of partnership and foresight.

Design and metaphor

1.




[People less important]




[People more important]

Inverted highway.
People on the top.

Settlement of the people and hawkers. Settlement of cars

2.

[Disordered]
[without freedom]

[ordered]
[free to settle]

open settlement

3.

[Not enjoyable]

[most enjoyable]
Collective sleeping,
free to sleep on the beach to enjoy life

Enjoyable sleeping place

4.

[The noisiest]
[not habitable]
[Fast]

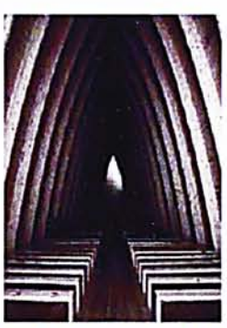
[The most silent]
[habitable]
[Slow]

Habitable structure

slower movement

5.

[The most-stressfu]



[The most peaceful]

Chapel

6.

[enclosed]

[open-up]

Open up study area.

7.

[weak]

[powerful]

Identity transfrom-from the most use-less to the most powerful sculture

8.

[repressive]

[expressive]

Identity transfrom-from the most use-less to the most powerful sculture

# Design Explorations

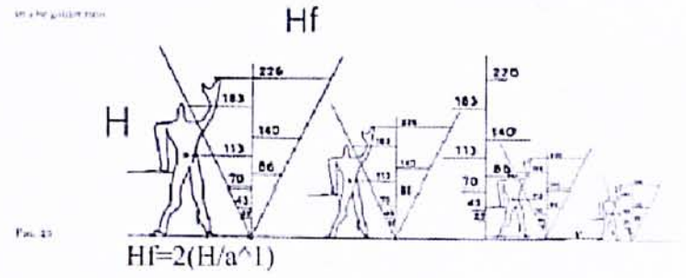
## How is better order possible ?

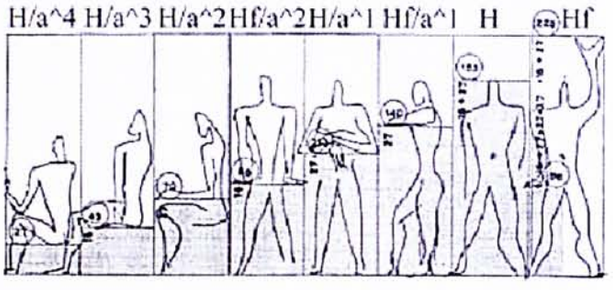
## Redevelopement of client base modular system.

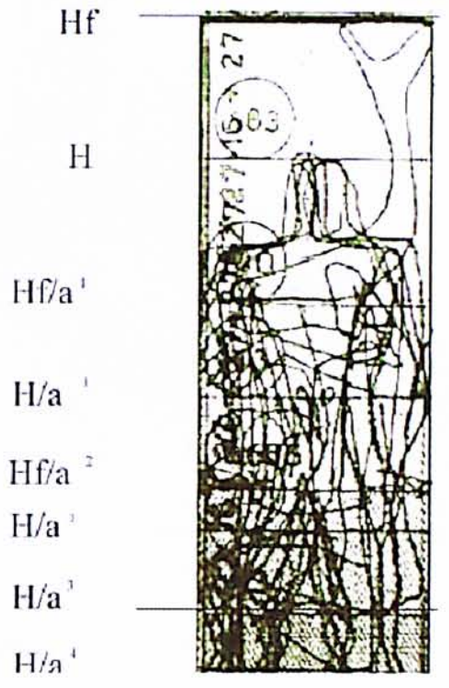
In a tiny space, the size of every person is different, chinese is probably
To acquire flexiblity and transformation of space and spatial elements,

y be used.

for example, H=170 Hf=210
it can be client based



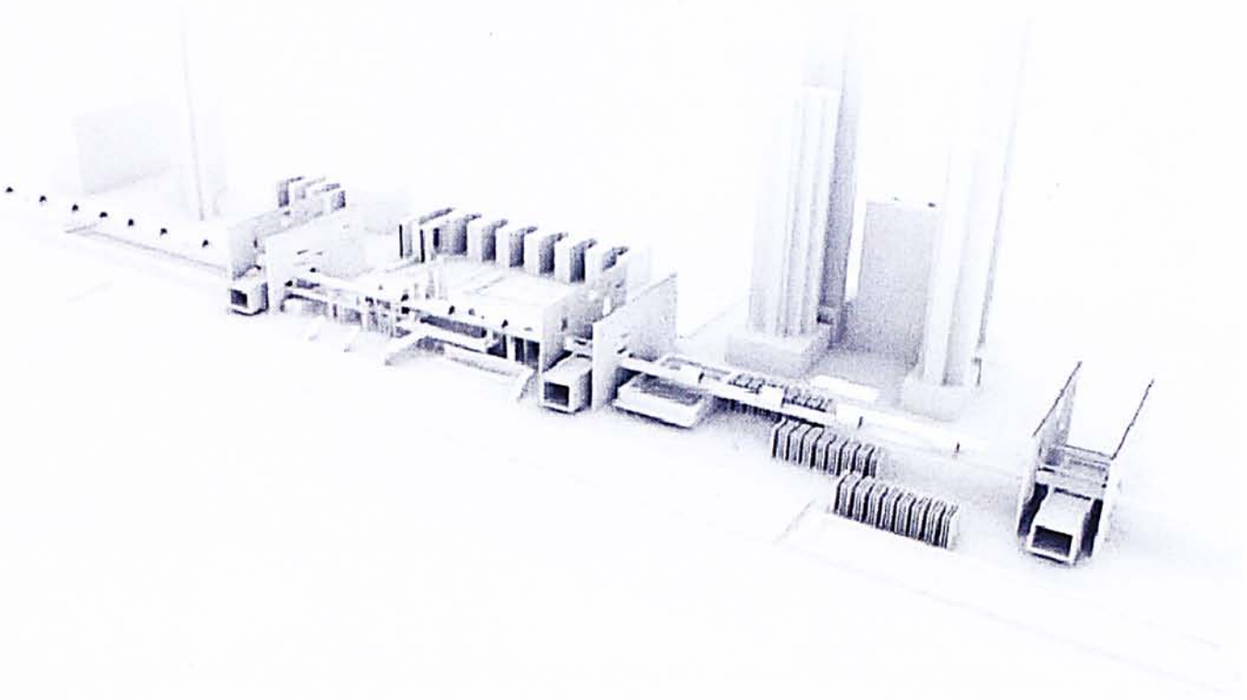



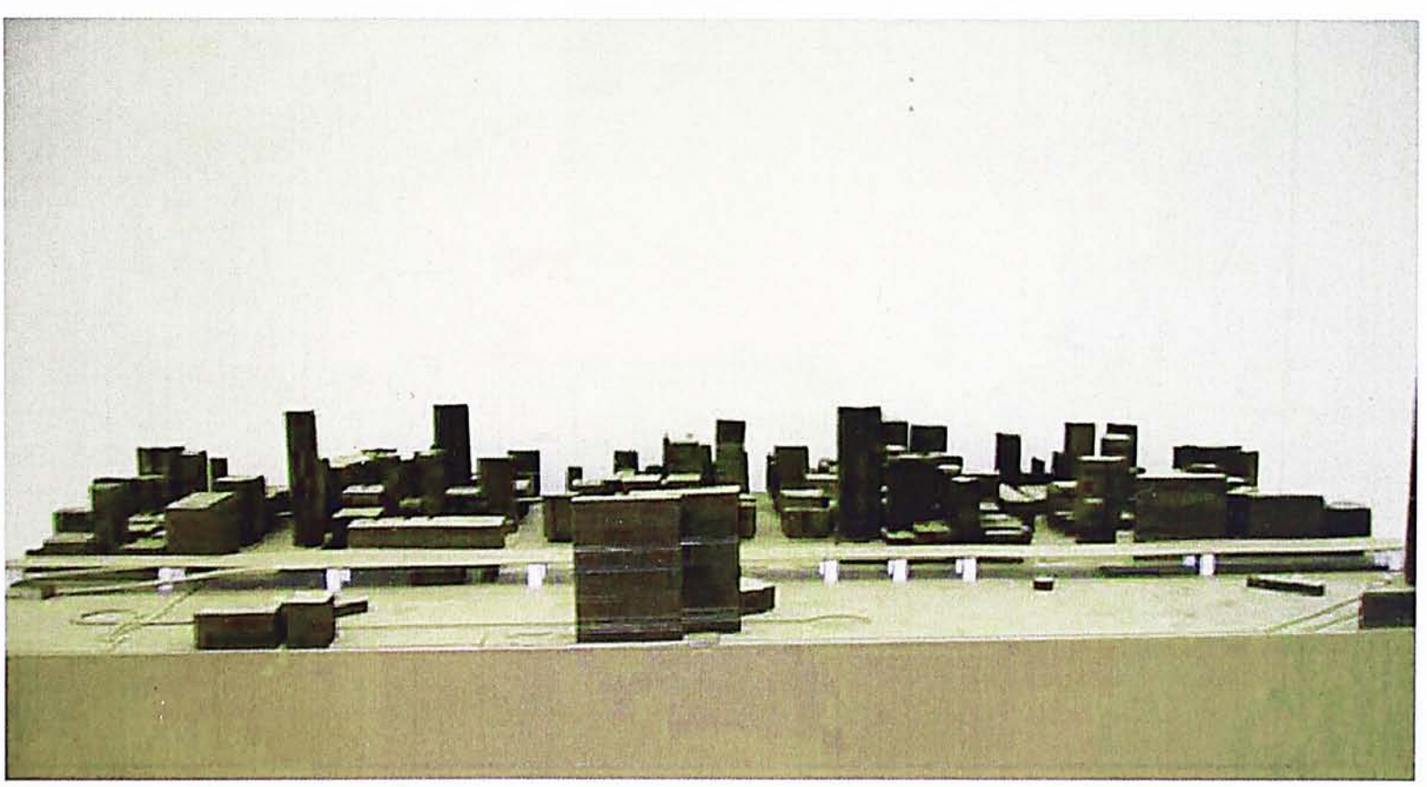




## Why is it neccessary to redevelope a system?

What le corbusier did in modular is the absolute system. To make it even more flexible and applicable a new system was developed.

Prelimeary design - the western corridor is sucken underground to reduce enviromental stress to the people.

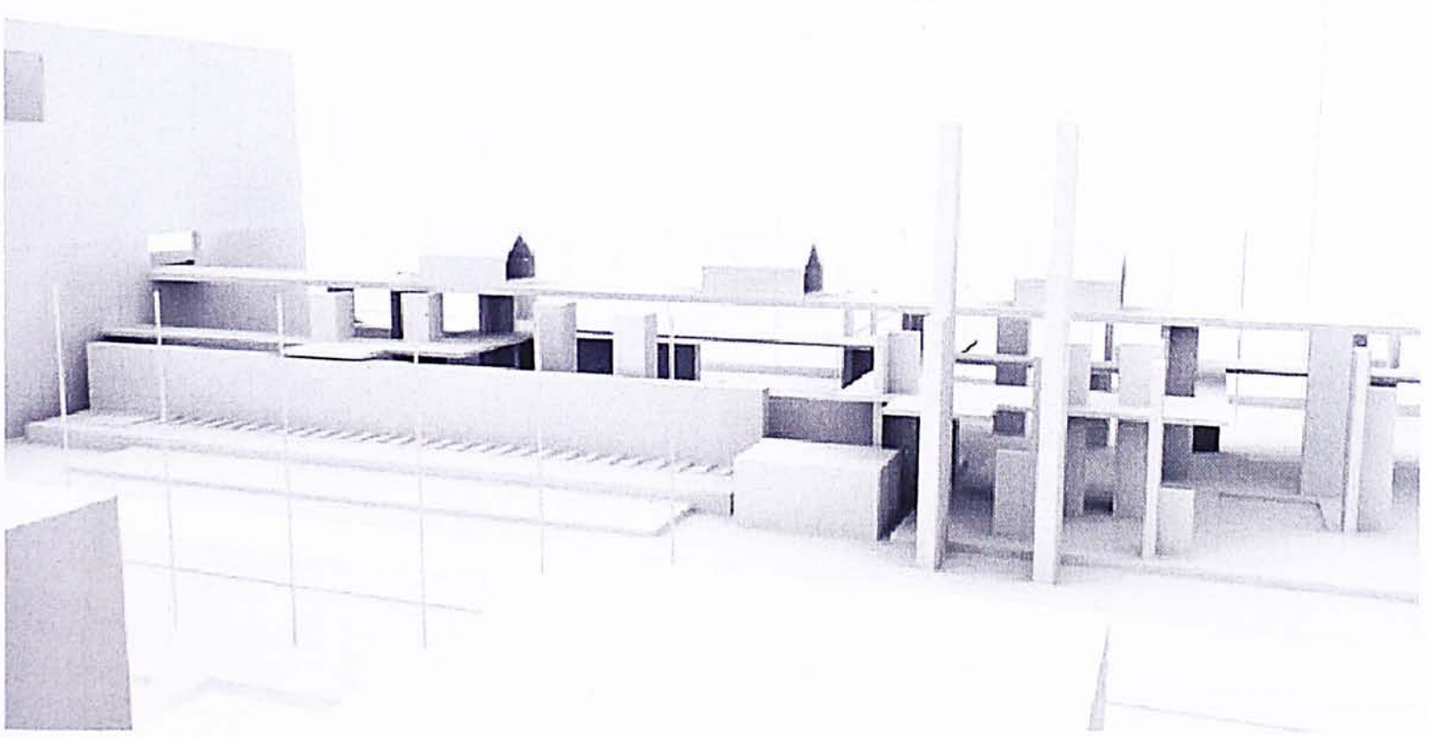




Chapel , working space, place of solitude are provided for the deprived and social workers.

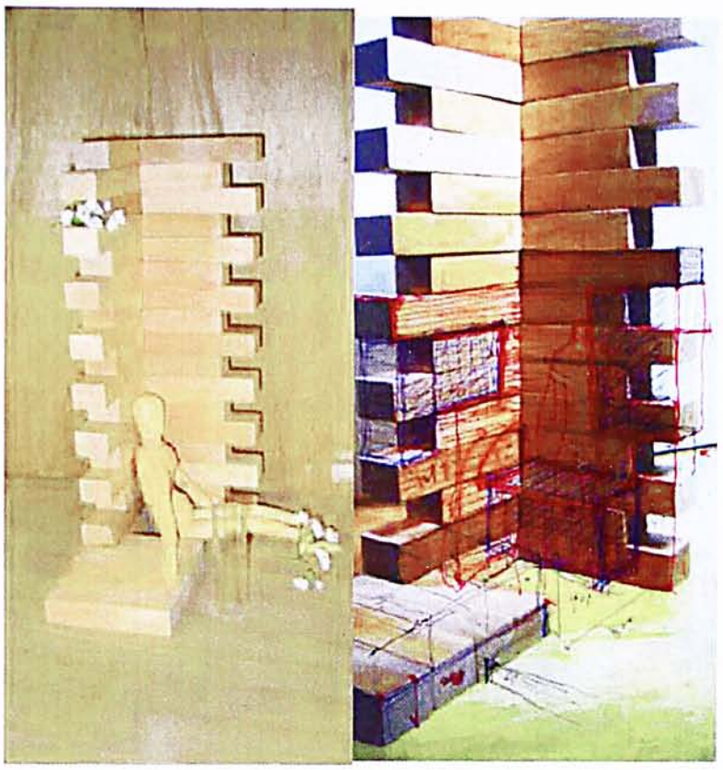
A trial of application: A habitable wall and column may be developed on facade.

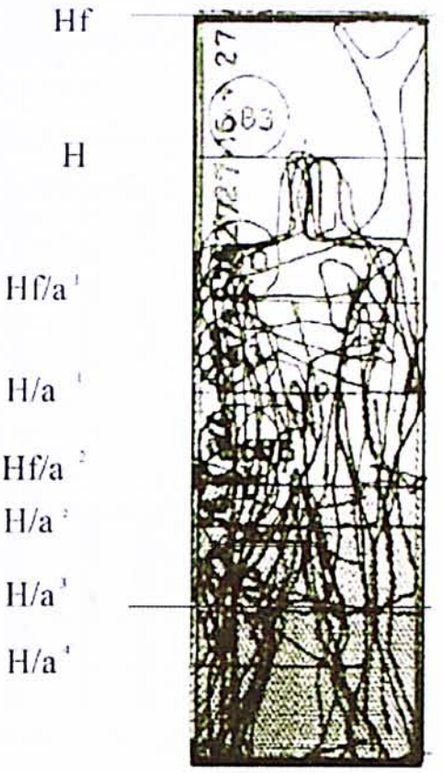
open space is provide for the settlement of streetsleeper and hawkers.

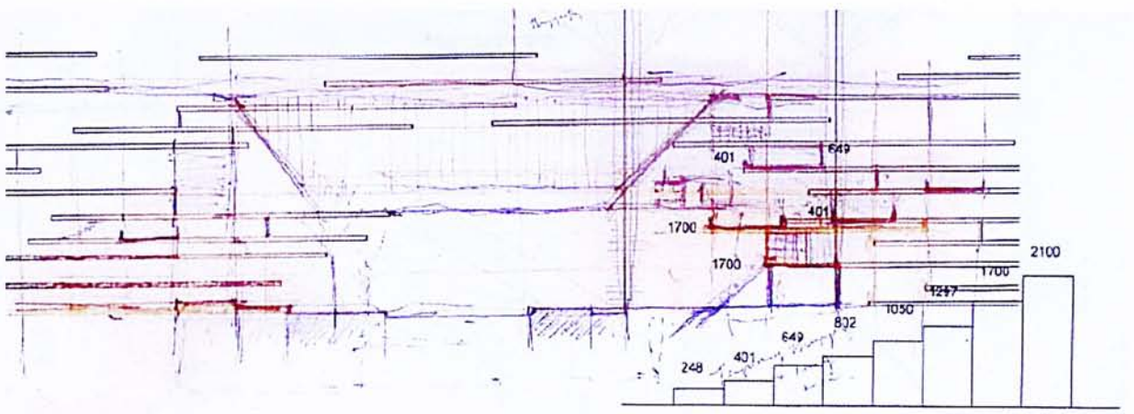


## Study model of habitable column ?

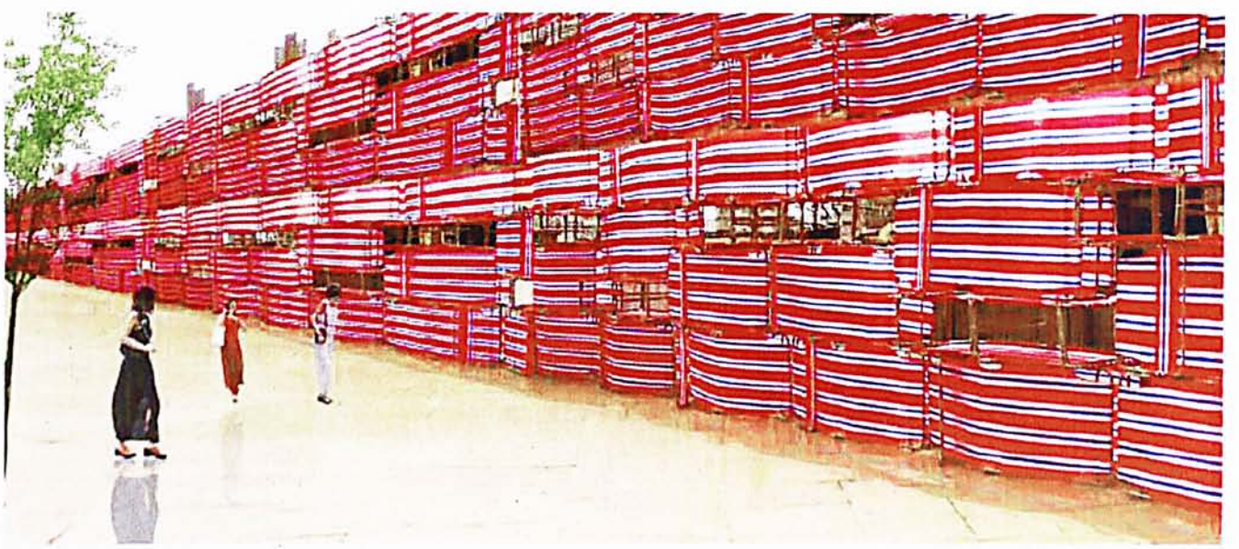
oy be used. for example, H=170 Hf=210
it can be client based





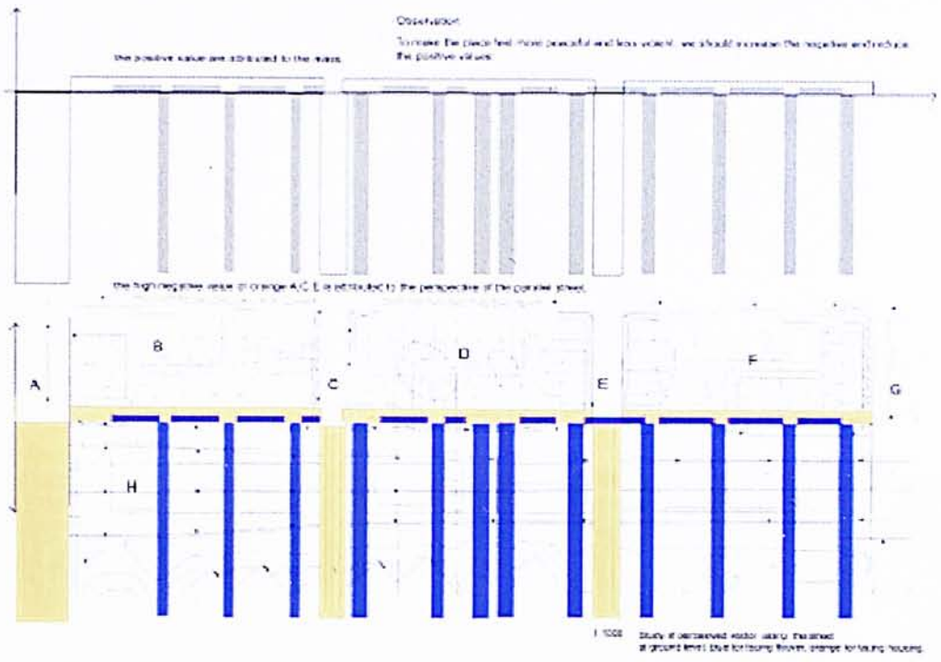




RE - MODULATION OF CHINESE MODULAR OF 1700.

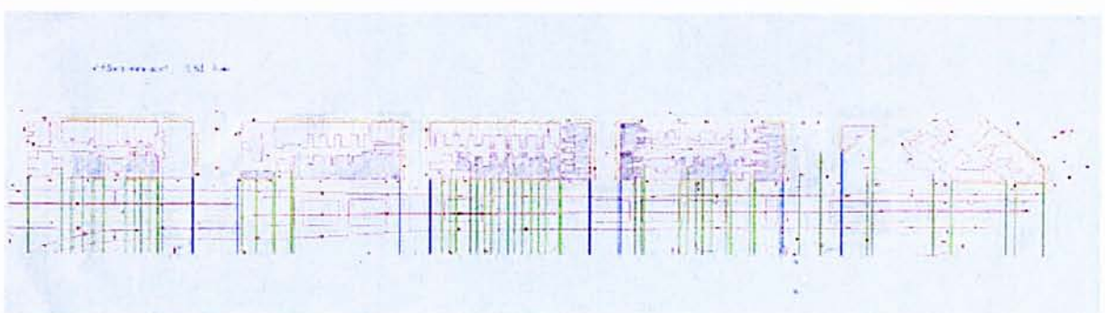


**Why is the site and how it can be designed by using the theories derived in Part one ?**

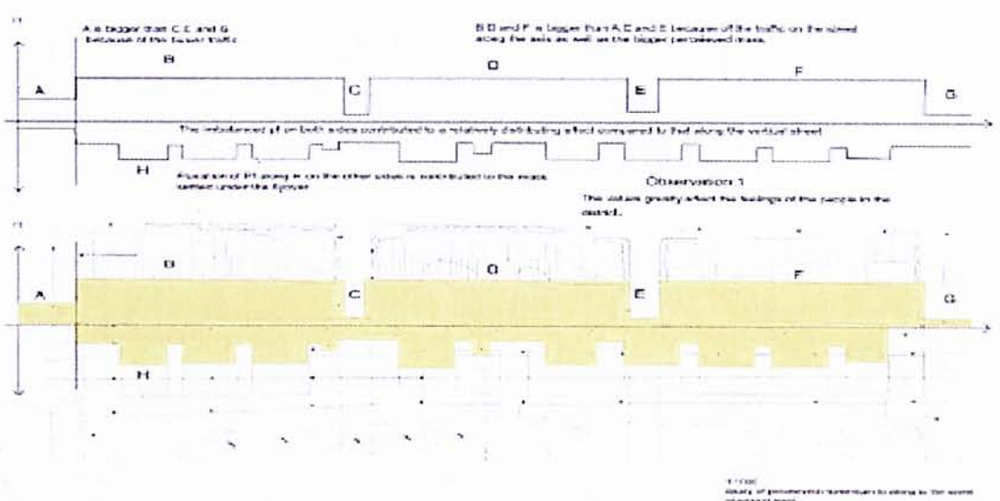
The noisy one and the place where the most deprived people settle is choosen.




**Site grid and building to be demolished**



**Site grid to me kept.**

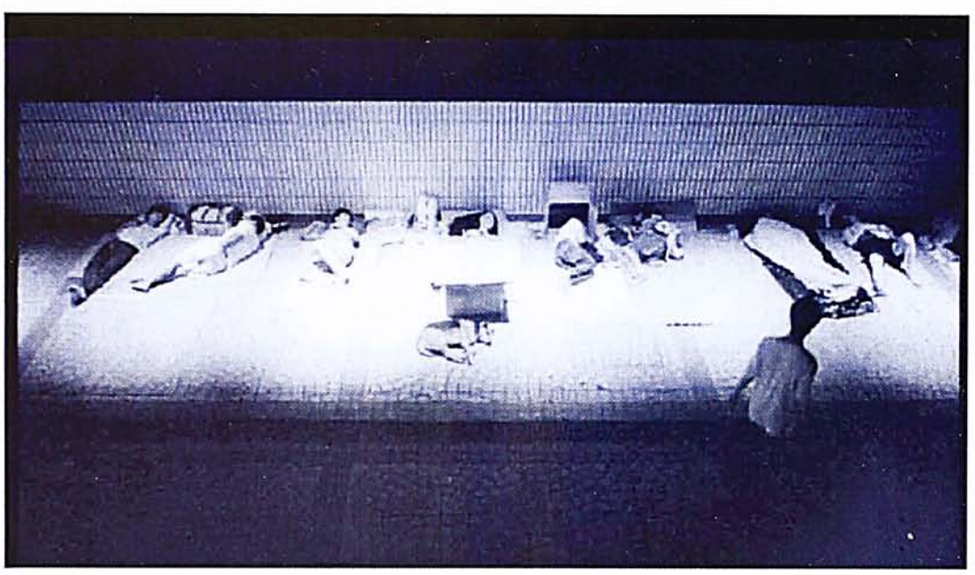


The logic of settlement. Simulation by computer.

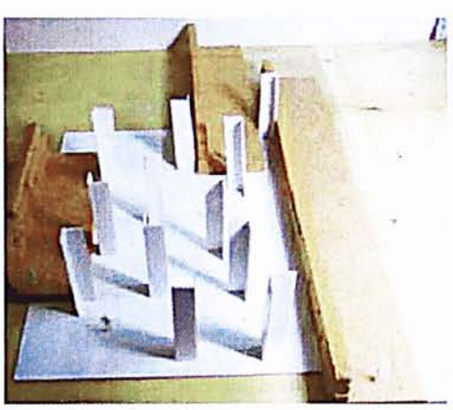
## Gathering is not a permenant event

The impermenace of gathering. A 2-hour gathering simulation.

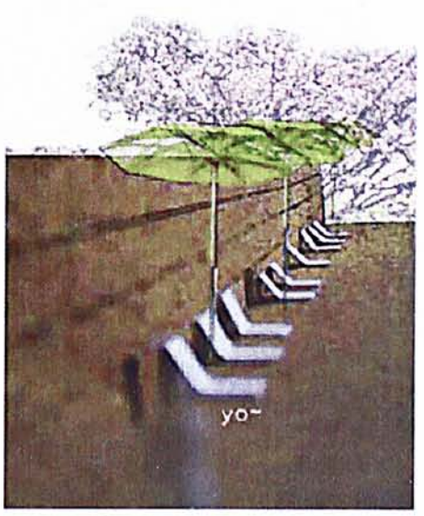
Random Walk and Diffusion of Many Independent Particles: An Agent Based Simulation by Wolfarm mathematica player
(50,0.043) number of particle, level of noise



Exploration of space for wanderer, street sleepers and hawkers



A trial to get a balance between openness and order by using ' habitable columns"



## How planting may be possible?

CAGE HOUSE

GREEN WORKERS

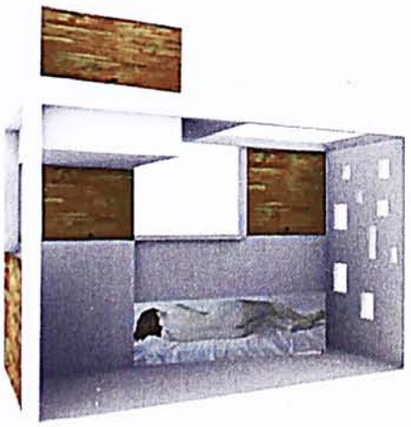
FUTURE SYSTEMS

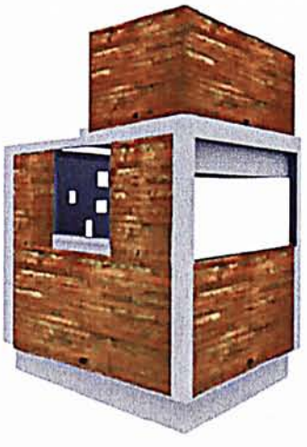
## What other activities may happen ?

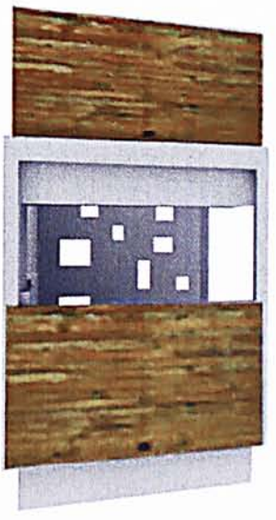
(Image from our life in west kowloon 2 by SoCO)

CAGE HOUSE

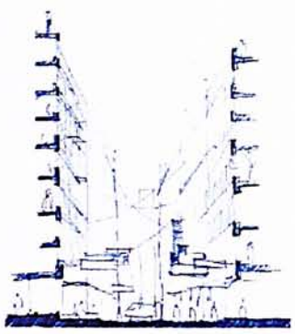
Hawkers was originally settle on the street freely. After the control by the government, some are located on the newly built market. Some are kept on the street inside untidy tiny boxes. Some are located under the West kowloon corridor. Some lost their jobs. One of them even committed suicide.



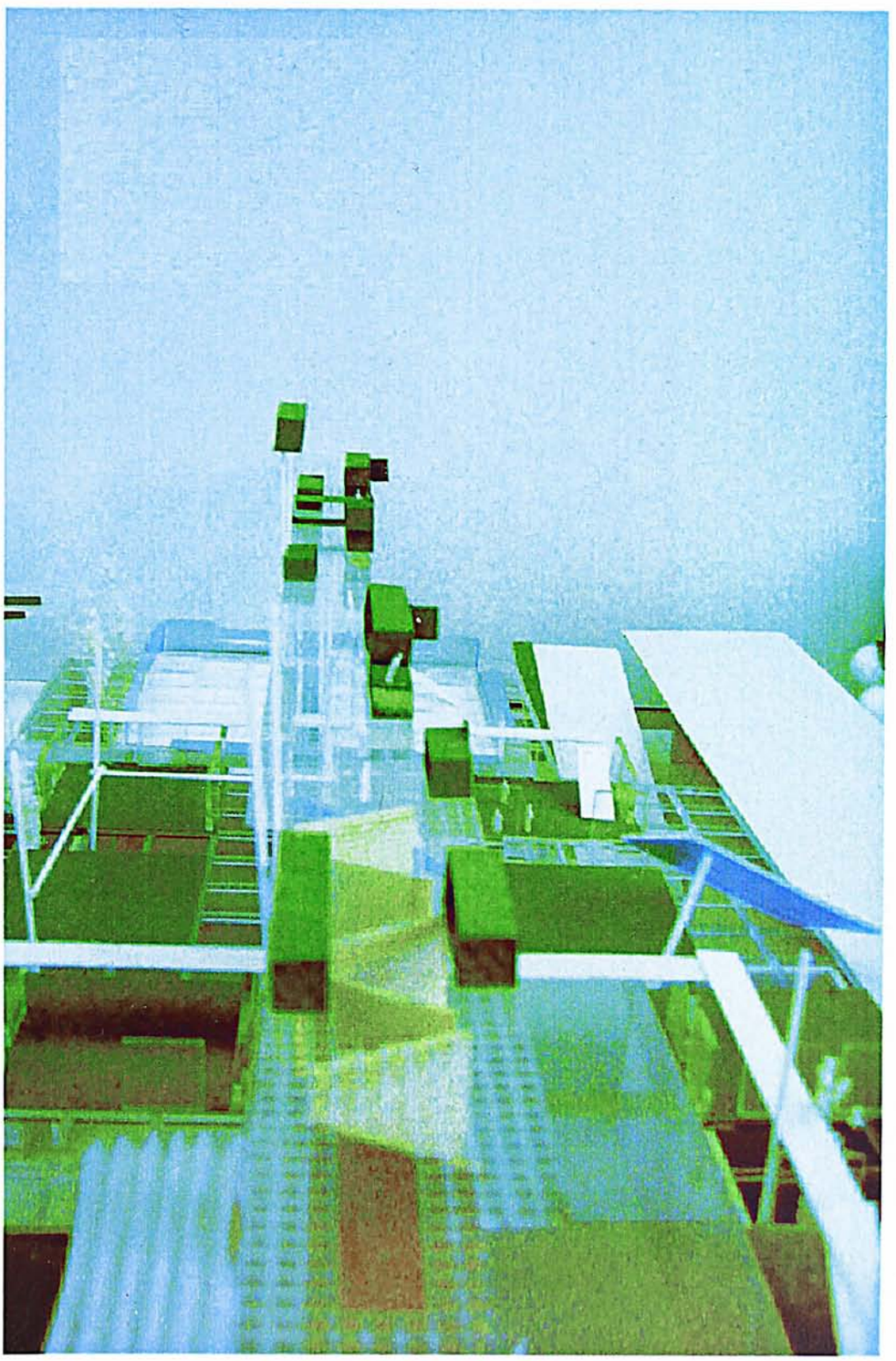




sketch of Apliu Street

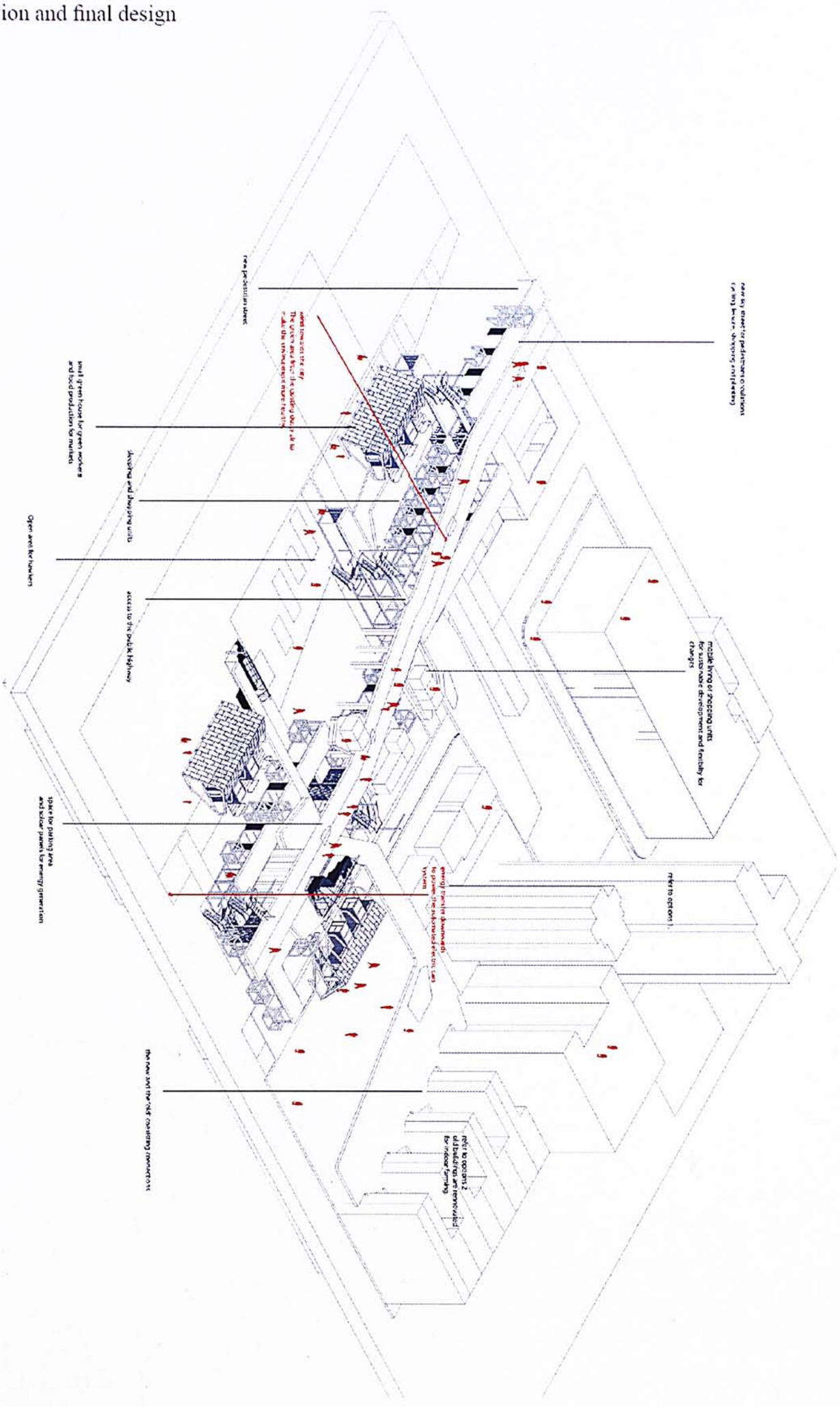


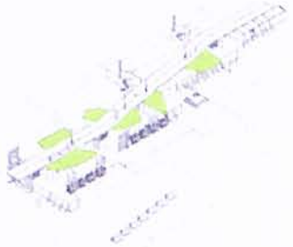
sketch of Pei Ho Street



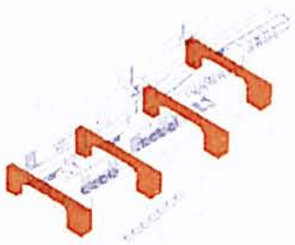
integration of green house

integration and final design

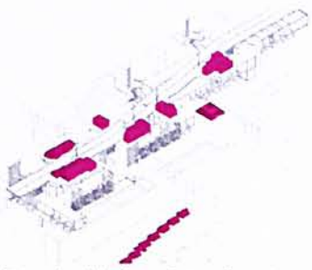




Parking area of container house, shops and green house

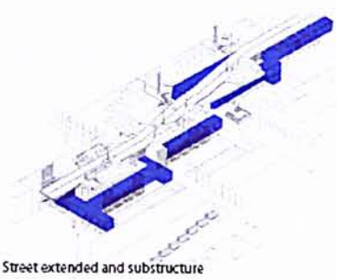


main structure on subway to support the street



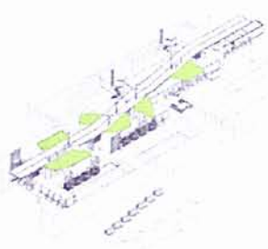
Parking area of container house, shops and green house

New path for circulation

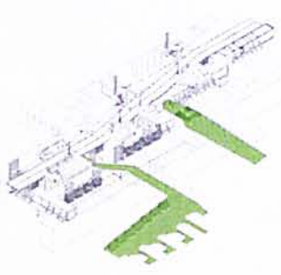


Street extended and substructure

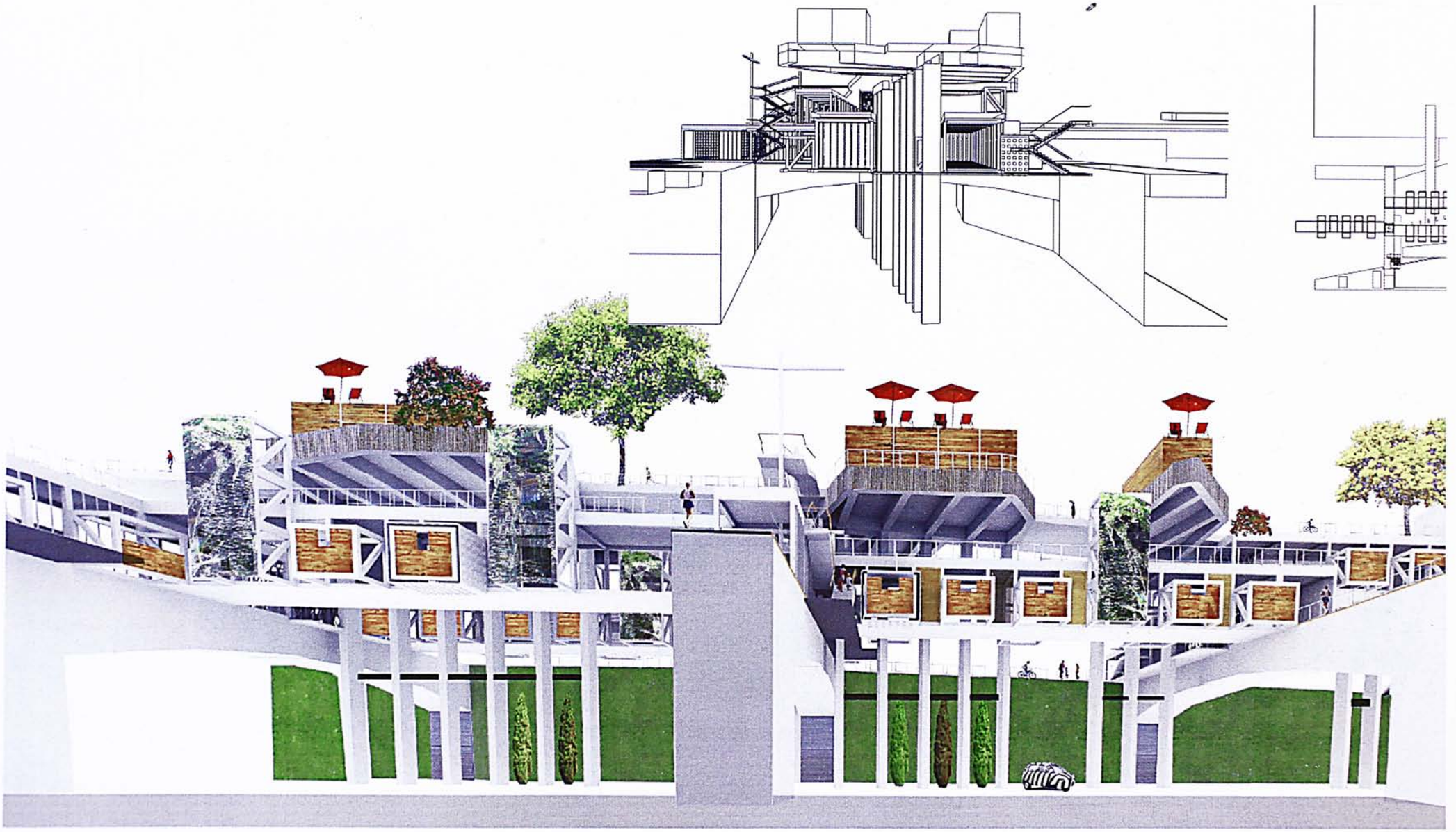
Parking area of container house, shops and green house



Pinics areas with green house connect to existing Urban fabric

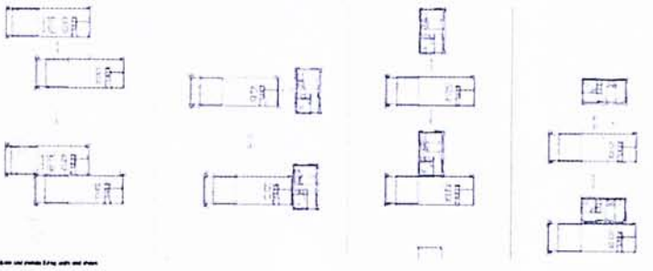


Small living units and shops



future high rise development

' future further developement



Will we drive on underground automated highways?
by Robert Llanos

Automated Traffic Underground
Each year, researchers make new strides in a number of technologies that would play a huge role in diverting automated traffic underground. Some of the existing technology is very promising, suggesting we might actually embark on our first subterranean road trip somewhere in the next century.
As we learn to drive a massive tunnel-boring machine, they put the finishing touches on the support structure for a train tunnel.

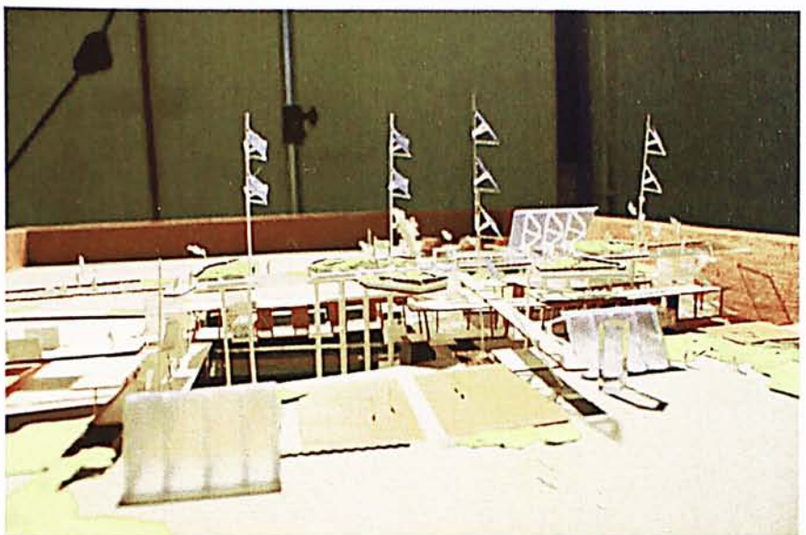
When it comes to designing an underground automated highway system, much of the technology has been around for more than a decade. In the 1990s, the U.S. Department of Transportation sponsored the National Automated Highway System Consortium (NAHSC), which resulted in a very promising demonstration of current technology. The NAHSC equipped eight cars with several different automated driving systems. These included radar to detect other vehicles and magnetic and visual sensors to follow a length of highway marked with buried magnetic sensors and visual markers. Over the course of the demonstration, these vehicles traveled a combined 7,600 miles (12,875 kilometers) and carried 4,200 passengers without incident [source: Smart].

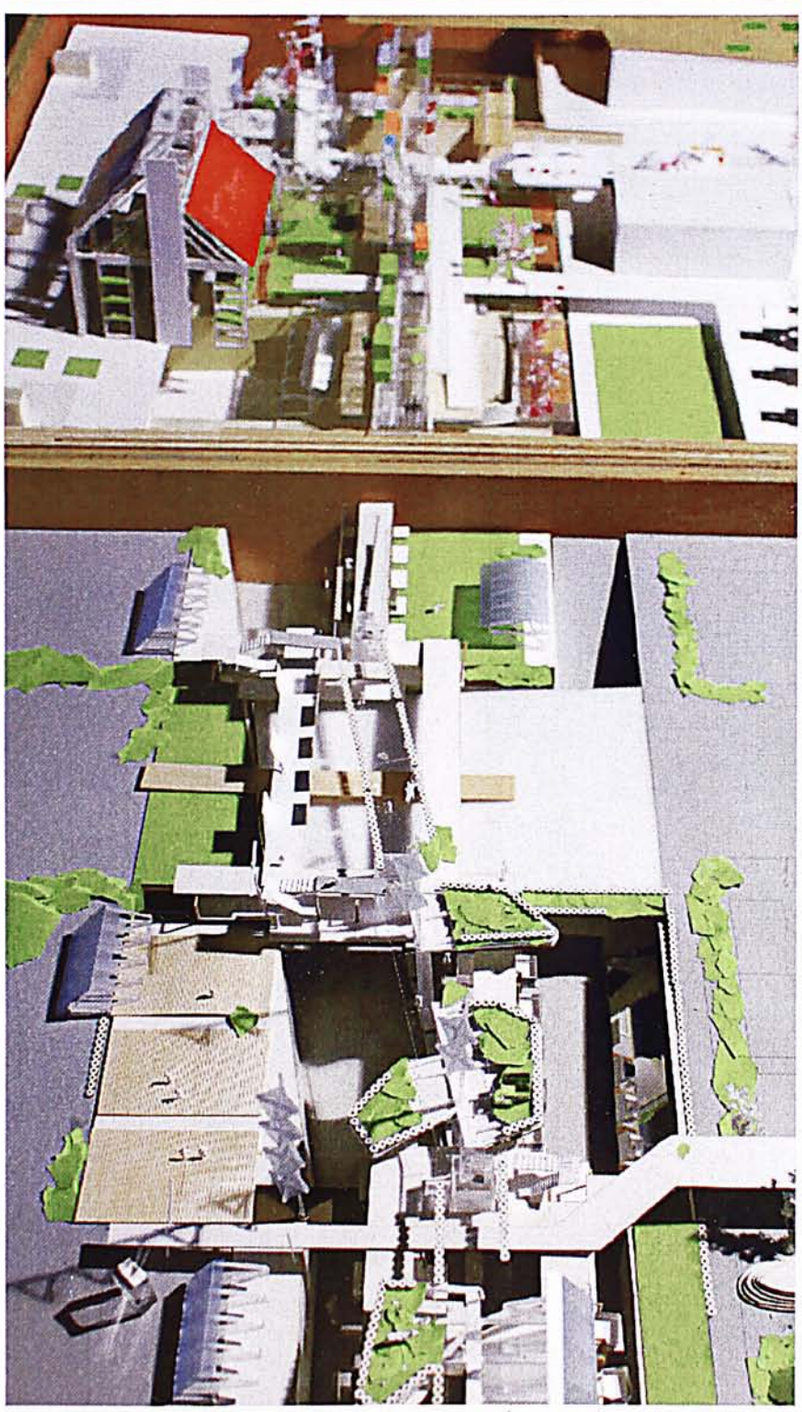
Realizing the dream of self-driving cars will involve developing improved collision avoidance systems (versions of this are already on the market in some vehicles), infrastructure guidance and automated, real-time routing systems. Experts predict that the first examples of automated highway systems will emerge in the form of special lanes, similar to high occupancy vehicle (HOV) lanes, designated for automated commercial trucking operations. From there, as the technology becomes more reliable and available, civilian use of AHS technology will steadily grow.

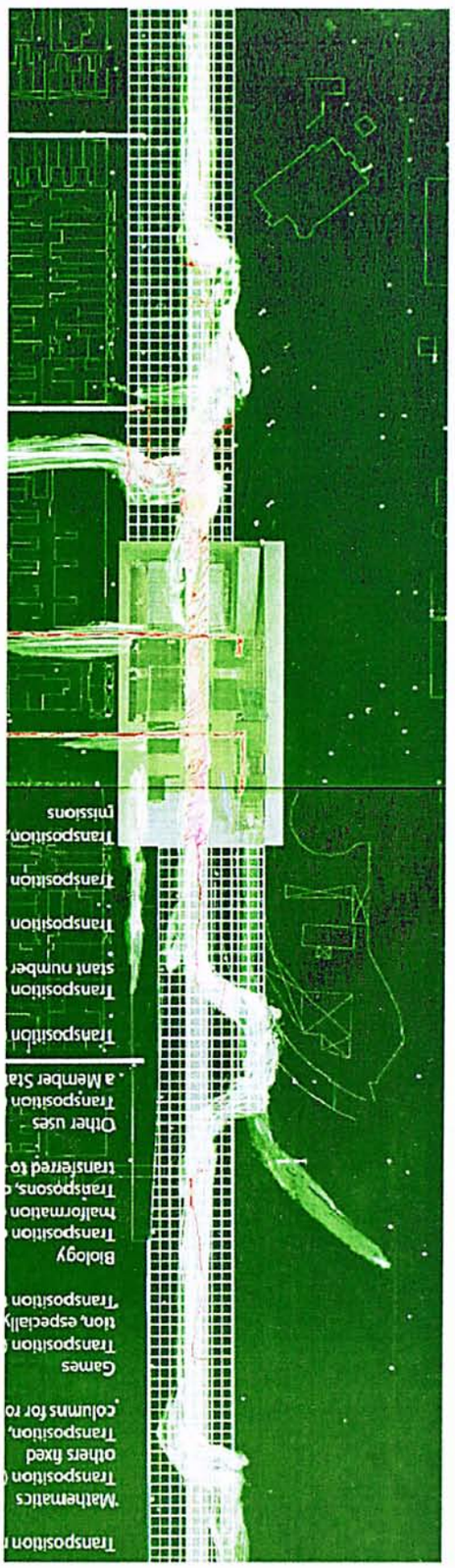
On the zero-emissions front, a number of major automobile companies and private design groups are working diligently to create cleaner and more efficient fuel systems for vehicles. From General Motors' hydrogen-powered fly-drive to the Rinspeed Automatic Electric Vehicle currently available in India and the United Kingdom, the technology is steadily becoming more practical and efficient.

But what about automated tunnel-boring technology? While you might think the idea of massive, robot worms digging their way through the earth sounds like something from the age of Mindbenders, the technology is not that far off. Several countries have continued to pursue tunneling projects and associated technologies during the last decade, leading to a decrease in tunneling costs and an increase in efficiency. Recent tunneling costs have dipped as low as $1,500 per cubic foot, and the latest tunnel-boring machines can tunnel through rock that contains at a rate of 20 feet (six meters) per hour [source: Smart].

Most researchers agree that improved earthquake prediction systems must be developed to ensure the safety of UAH travelers. However, designers are encouraged by past incidents where underground structures thrived with the land during quakes, resulting in relatively little damage. In fact, after an earthquake struck Japan in 1995, underground projects were the least damaged structures in the city of Kobe. A massive tunneling project would also create a great deal of dirt and rock, which would need to be relocated elsewhere. Planning where to transport it would be a challenge, but using the theoretical AHS on the surface would expedite the process of moving this earth to its final drop point.








Final design speculation 2030 -2060